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Around the World

AIR CARGO burst onto the front pages the week of July 20 in such a dazzling limelight that aviation men, who have plugged so staunchly to the point of weariness for recognition of air transport in the war, were somewhat stunned by the sudden attention.

With Nazi submarines giving the U. S. a humiliating beating without let-up week after week by sinking surface vessels faster than we can build them, the sad force of events would seem to be bringing about the inevitable inventory of what kind of a war we are fighting and what we are going to fight it with, and especially, how we are going to transport from here to there.

Had the recommendations, the reports, the studies, the plans and the pleadings of aviation experts been put into motion by Washington long ago, the "discovery" by the newspapers and others that there is an ocean not traversed or menaced by submarines might not have been so startling. Eight months after we were in the war, and almost three years after the big European outbreak, is a mighty hardy time for discoveries.

Be that as it may, one can be heartily grateful that the problem of air transport in the war has been pushed into the open. It is unfortunate that at

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Army Assigns World Routes; Won't Take Over U.S. Carriers



Chicago Sun Photo

Airlines' New Routes Cover Globe

Brig. Gen. George, ATC Chief, and Maj. Smith, His Press Officer, Study Expanded Airways

Nine Airlines Asked to Expand Cargo Flying

By ROBERT H. WOOD

BRIC. GEN. Harold George, commanding general of the Air Transport Command, called executives of nine U. S. airlines to Washington on July 20, assured them the Army will not take over any domestic line, and asked how quickly they can start world-wide transport service for the United Nations.

Under the plan, the companies will operate under contract to the ATC, probably on a cost-plus basis, using a constantly-increasing fleet of new transport planes which are scheduled to come off the assembly lines in gratifying numbers during the last five months of the year. About Jan. 1 the entire program will be surveyed and probably expanded, in the light of the tremendous aircraft output scheduled for 1943.

Thus, in one day, the outlook for the industry was transformed from uncertainty and doubt to optimism and enthusiasm over the opportunity to do the biggest job in airline history.

Meetings were scheduled immediately by the Air Transport Association, setting in

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Refueling ATC Plane on Pan Am's African Route
Native Boys Work on C-53 (Special Photos, Pages 48-49)



"SNUB NOSE". . . In this war it takes heft to win.

The massive visage of the *Republic P-47 Thunderbolt* is a symbol of fighting brawn and rocket speed . . . of terror to Nazi and Jap . . . Republic Aviation Corporation, Farmingdale, Long Island, New York.

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ATC Evacuation Group Organized to Supervise Transport of Wounded

THE AIR EVACUATION GROUP (Medical) which will be charged with the aerial transportation from the theaters of war of sick and wounded military personnel, is to be organized under the Air Transport Command, according to Army Air Forces officials. It will be provided with as complete facilities for treatment in transit as are known to aero-medical research.

The unit will use transport planes, and will function as part of the Air Transport Command. Plans for its administration are being drawn up by Brig. Gen. David N. W. Grant, the Air Surgeon, under the supervision of Lt. Gen. Henry H. Arnold, Commanding General of the Army Air Forces. A flexible system will be provided which will enable the use in each theater of war of a technique specially adapted to it.

The aircraft will serve a double function, bringing in supplies as well as taking out the wounded. All Army transport planes are now factory equipped with fittings for racks and supports to accommodate standard Army litters, officials disclosed, adding that they will be able to carry as many as 40 patients in comfort. They will have facilities for surgical teams and for blood transfusions and the use of plasma, as well as medicines, stimulants and sedatives, thermos jugs for liquids, and chemical heating pads. The standard Army Air Forces oxygen mask, which has been found to be well adapted to medical needs, will be part of the equipment.

Over difficult terrain, such as that encountered in the Burma cam-



C-39's Wide Door Facilitates Loading
Planes Will Bring in Supplies, Take Out Wounded

by air is spared the strain of jolting over rough roads.

Each evacuation will be under the direction of a flight surgeon, trained in the selection of cases and conversant with the effects of air travel. Each of the larger planes used in this service will carry an Army nurse, and one trained Medical Corps enlisted man, to care for the patients.

Not only transports, but all other types of planes can be used in this service, including the small liaison plane, which can land on little emergency fields or even on highways. Gliders also may figure prominently in this program, according to Air Forces officials. Gliders would have the light plane's ability to land in a small area and new ones under construction would have the load carrying ability of a large transport. By this method, an average transport with two gliders could carry in tons of vital supplies to fighting forces and take out 100 wounded each trip.

A school to train Medical Corps enlisted personnel for this special work will be set up in the near future. Before acceptance for this service, nurses will be required to have air experience. Former airlines stewardesses are particularly qualified and in demand for this work.

ATC Carries 62 Tons of Air Mail for AEF

DURING the past 12 months, planes of the Army Air Forces Air Transport Command have carried approximately 124,000 pounds of mail totaling more than 6,000,000 letters to American soldiers overseas, the War Dept. has revealed.

Through recent developments, it is now possible to carry more than twice as many letters in a given space. Ordinary letters weigh about 38 to the pound, while the "feather-weight" type of air mail stationery weighs about 62 to the pound. The recently instituted V-Mail form, now available at post offices affords even a greater saving, weighing 100 to the pound.

Additional space and weight is saved when the V-Mail is photographed on microfilm, several hundred letters being photographed on a single roll of film which weighs only a few ounces. These rolls of film are flown to or from an overseas station. They are then delivered to a V-Mail station where photographic copies of the actual message are developed and forwarded to the addressee.

Ferry Losses Light

Review of the first year's operation of the RAF Ferry Command discloses that 995 out of every 1,000 American-built bombers and flying boats have crossed the Atlantic safely. The rate of losses for the 3,000 mile overseas hop is slightly more than one half of one percent.

B-24 Makes Six Atlantic Trips in Twelve Days

Six Atlantic crossings in 12 days—five of them made in nine days.

That's the record of a Canadian-American crew of the Royal Air Force Ferry Command which has been shuttling a Consolidated B-24 plane back and forth on the Montreal-Britain "commuter" run, says an announcement from the British Air Ministry.

The same crew has done more than 500 hours of over-ocean flying in the last 90 days prior to the announcement, including four round trips to Australia.

Crew members are Capt. Fortune A. Dugan, New Orleans, pilot; Capt. Ralph E. Adams, Emory, Tex., co-pilot; Flight Engineer Arthur F. Ryan, Toronto, Radio Operator James R. Fraser, Charlottetown, Prince Edward Island.

Middle East Air Chief

Gen. Lewis Brereton is now in command of the U.S. Army Air Forces in the Middle East, where he is directing bomber raids on enemy convoys and attacks on Tobruk and Bengasi, main points of entry for the Axis to the African theatre of war. Gen. Brereton, formerly head of air defense in the Philippines, has been in New Delhi, India, in command of American air operations in that area and in Burma and China.

"Jane's Aircraft" Out

U.S. warcraft factories will supply England's RAF with 1,000 four-motored bombers a month, according to present production plans, says the 1941 edition of "Jane's All The World's Aircraft," just published. Giving recognition to the big bomber as the most useful component of any nation's air force, the editor said many of the planes would be B-24's and B-17's. Other information in the publication included losses to both British and German air forces and also limited details of the late model warplanes.

Boeing School Honored

Boeing School of Aeronautics, Oakland, Calif., has been awarded a merit pennant for "outstanding service" in the training of Air Forces mechanics and technicians during the first six months of 1942. The award was made by U.S. Army Air Forces Technical Training Command.

The pennant will remain in the school's possession for six months and will then go to the school performing the most meritorious service for the last half of the year.



Two Interior Views of C-39
Craft Carries 40 Casualties

paign, a trip that may take as much as 18 hours by ground travel is accomplished in an hour by air. In addition to this often vital factor of speed, the patient transported

Stanton Sworn In

Charles I. Stanton was sworn in July 20 as Administrator of Civil Aeronautics, succeeding Brig. Gen. Donald H. Connolly, now Military Director of Civil Aviation.

U. S. Studies Mass Cargo Plane Output

Kaiser Plan Complicated By Materials

By DAVID SHAW

FIVE thousand flying cargo boats, to be built in established shipyards rather than in airplane plants, have been proposed by Henry Kaiser, West Coast shipbuilding genius, who is credited with cutting construction time on surface vessels from 197 to 46 days.

Presenting his plan to the Maritime Commission in a speech at the launching of one of his ships in Portland, Ore., Kaiser called for conversion of nine shipyards, three on the West Coast, three on the Gulf Coast, and three somewhere in the East, from building cargo ships to building flying boats such as the Martin "Mars."

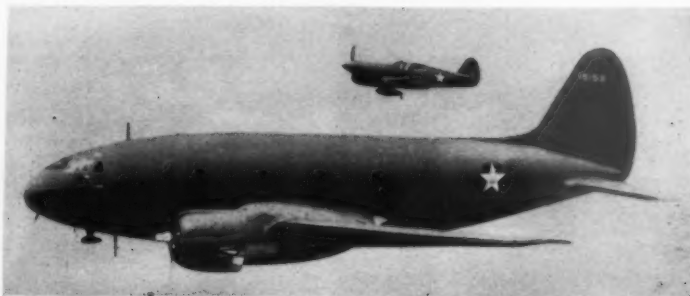
According to Kaiser, an annual production rate of 5,000 flying boats of the Martin Mars type could be reached by the shipyards within 10 months.

Production lines, he said, could be in operation within less than six months, with each shipyard turning out 10 planes a month for the first three months and a maximum of 40 a month per yard within a year.

In Washington and throughout the aircraft industry, men familiar with Kaiser's reputation for accomplishing the impossible have been cautious in commenting on whether such a plan is practical. In view of the present materials situation officials ask what Kaiser would use to build his planes, rather than argue over whether a shipbuilder could turn out airplanes.

The situation on materials for cargo planes admittedly is grave, and probably will continue thus at least until 1942 combat plane schedules are met. WPB Chairman Donald M. Nelson, who on several occasions has pointed out his awareness of the cargo plane situation, states that allocation of materials and production facilities for an expanded cargo plane program can not be made except at the expense of other war items. Mentioning the fact that there already has been considerable official action toward building up our supply of cargo planes, Nelson said "the present cargo plane program is already of considerable proportions and is increasing rapidly."

Whether Kaiser's proposals will



Newest Cargoer: One of the first production models of Curtiss Commando military transport, the 25-ton C-46 being delivered to Army Air Forces for cargo and troop carrying. Accompanying it is a Curtiss Warhawk.

Nelson Receives Cargo Plane Report

Donald M. Nelson, Chairman of the War Production Board, following receipt of a report by the cargo plane committee he appointed early in June, said on July 21 that he has been "making an intensive study of the enormously complicated problem of the cargo plane and its possible future use in the war program of the United Nations."

The following is the text of Nelson's statement as released by the Office of War Information:

"Mr. Nelson advised against undue optimism about the possibilities of immediate construction of cargo planes of any new type.

"He added that men, machines, facilities and materials could not be made readily available for any new cargo plane program, beyond the program now underway, except at the expense of other parts of the war effort. Moreover, it would take a considerable time to get substantial numbers of planes of any kind not now in production.

"The present cargo plane program is already of considerable proportions and is increasing rapidly.

"Mr. Nelson is giving attention not only to proposals to build a fleet of giant ships like the new Mars, but also to the possibility of enlarging the present program for smaller cargo ships which are already in production and on which the necessary production engineering has been done.

"His study also covers all other important phases of the matter, including the question of fuel supplies, the conservation of strategic materials and the relative efficiency of the various types of cargo planes.

"Mr. Nelson pointed out that many considerations of strategy are involved and any decision must be made in close consonance with the highest strategy officials of the United Nations.

"The report submitted to Mr. Nelson last week by his special committee on cargo planes is secret.

"On the basis of the material contained in his report, he will hold conferences with appropriate authorities at once and will see to it that a decision is reached on the questions involved as rapidly as possible."

result in any official action, now or later, is felt not to detract greatly from the significance of such a proposal coming from such a man. Significance lies in the fact that Kaiser's reputation for doing things no one thought could be done may get him official attention exceeding anything which could be achieved by any other lesser figure outside the aviation industry who might make the same proposals. Also public attention has been focused on the cargo plane situation through widespread quotation of his remarks.

Kaiser's plans, while known to a substantial part of the industry and explained by him to AMERICAN AVIATION almost a week in advance of his public statement, caught official Washington and the general public by surprise. His statements on the number of men and the quantity of materials which could be carried to any part of the world by 5,000 big flying boats is surprising news to much of the public. The fact that construction of 400 14-ton cargo planes per month would provide more than ten

times the air cargo capacity now being produced monthly is a surprise to many Washington officials.

Nevertheless, beyond a few general and inconclusive comments by Congressmen, and an occasional remark on the tightness of the materials situation by officials who prefer not to be quoted, there has been no official stand taken on whether shipbuilders should be given contracts for flying boats.

Rear Admiral Howard L. Vickery, vice chairman of the Maritime Commission, who was on the program when Kaiser offered his proposal and who stated that the United Nations were losing ships faster than they can build them, had no comment to make following Kaiser's speech. Nor has the Maritime Commission since then stated its attitude beyond indicating that the matter is one to be decided among higher policy makers.

Cancellation of contracts for the building of new shipyards in New Orleans, which was attributed to shortages of materials and the fact that established shipyards were found capable of meeting established quotas, brought Andrew Jackson Higgins who had the contracts to Washington to urge that the new shipyards be completed and used for cargo planes if they were not wanted for more surface vessels. He indicated that he and Kaiser had discussed cargo plane plans earlier, and intimated that his new shipyard, on which over \$10,000,000 already has been spent is being built with a view to constructing flying boats as well as Liberty ships.

It has been generally felt that Kaiser's selection of the Mars for mention as a type to be produced indicates his awareness of the current official inclination to look only to proven models for production. War Production Board's special committee of cargo planes has expressed enthusiasm over the Mars, indicating surprise and pleasure that anything so large could perform "so much like any other airplane."

Glenn L. Martin, asked for his opinion on whether the Mars could and should be constructed in shipyards, said:

"We are anxious to make every possible contribution to the rapid development of an air cargo transport fleet. If the government wishes us to follow the suggestions of Mr. Kaiser and license the shipbuilding companies to help manufacture the Mars type of air vessel, we shall be glad to do so, and to extend our full cooperation.

"It must be left to the judgment of the government authorities which organizations will be called upon to

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ELECTRONIC'S "MOBILE LAB"

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Interior Mobile Laboratory. Fully equipped for the testing and design of electrical equipment in the field.

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That's why we send engineers into the field, fully equipped, to study the performance of Electronic Vibrator Type Power Supplies under *actual combat conditions*.

The U. S. Signal Corps picture above was taken in the field, on one of the many assignments which keep Electronic's Mobile Laboratory rolling. *Tough engineering begets tough products and you won't find "softies" in American tanks!*

You will also find Electronic Power Supplies on planes, P-T boats, walkie-talkies, peeps, jeeps, half-tracks, mobile amplifiers, and other military equipment.



Power Supply using recharged non-spill storage battery for operation of "Walkie-Talkie" radio equipment. Input Voltage, 4 1/2 Volts; Output, Numerous voltages supplying filament and plate requirements of equipment. Width, 3 1/2" Length, 6 1/2"; Height, 4 1/2".

For Tank Transmitter-Receiver Operation. Dual Input, 12 or 24 Volts; Continuous Output, 500 Volts at 200 Ma.; Intermittent Output, 500 Volts at 400 Ma.; Efficiency, 55% to 60%; Regulation, 13% on 24 Volts; 22% on 12 Volts; Output Ripple, Less than 1/2 of 1%; Width, 8 1/2"; Length, 13 1/2"; Height, 9 1/2" (including Shock Mounting Assembly).



Electronic

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INDIANAPOLIS

Vinson Report Shows Low Aviation Profits

Committee Lauds Aircraft Manufacturers and Navy, Admitting Supremacy of Carriers Over Battleships

By KATHERINE JOHNSEN

COMMENDING the Navy Dept. "as a whole" and "at least 95% of naval contractors who are not profiting unduly," and who have "met and overcome the problems in changing from a peace to war economy," the Supplemental Report of the House Naval Affairs Committee, recently filed, shows average profits on aviation contracts for the past year of 4.7%, as compared with the 8% average on all naval contracts.

The year's survey of 287 aircraft contractors and subcontractors, covering 628 prime and 283 subcontracts (divided in turn between 688 competitive-bid and 233 negotiated), and involving a total of \$496,832,192, reports a total profit realized or anticipated of \$22,241,127—or 4.7%.

	Number of Contracts	Amount Involved	Profit	Profit Percentage
Prime Contracts	628	\$456,394,990	\$20,881,645	4.8
Subcontracts	283	\$40,437,202	\$1,359,482	3.5
Totals	911	\$496,832,192	\$22,241,127	4.7%

Profits on individual prime contracts, however, ranged as high as 122%; on individual subcontracts as high as 56%. On 275 (32%) of the 911 aviation contracts tabulated there were incurred or anticipated losses, the report states.

The report explained that the above profits are "by no means conclusive," due to large losses on experimental work in prior years and failure of contractors to return questionnaires. It also declares that: "... it is significant that losses were reported on Navy contracts although large profits were reported on foreign and commercial contracts during the same periods of time. . . . For the accessory producers, it is significant that profits were over double for the period subsequent to Jan. 1, 1940, as compared to the period prior to Jan. 1, 1940, that is 7.6% to 3.5%.

As a result of its probe of naval contracts, the House Naval Affairs Committee claims it has already saved the government \$703,958,887 in contract renegotiations with both the War and Navy Departments.

Direct Savings:

Completed renegotiations by Navy Dept. Bureaus	\$8,104,887
Sperry Corp. (Army and Navy)	100,000,000
North American Aviation, Inc. (Army)	74,000,000
Bendix Aviation Corp. (Army and Navy)	73,354,000
Continental Motors Corp. (Army)	39,000,000
Jack and Heintz, Inc. (Army and Navy)	9,500,000
Unnamed company (Army and Navy)	150,000,000

Total\$533,958,887

Indirect Savings:

Reported by official of Navy Dept.	\$150,000,000
Revision of "time and material" ship repair contracts	20,000,000

Total\$170,000,000
Grand Total\$703,958,887

(The "Unnamed company" referred to is possibly Consolidated Aircraft Corp. Neither the Naval Affairs Committee nor the Price Adjustment Board has released information on the Consolidated renegotiation, which reportedly is not yet completed. However, Donald Nelson, at a House Appropriations Committee hearing, stated that "Consolidated gave back about \$125,000,000".)

Negotiations Continue

"The above amount will be substantially increased as pending negotiations bear fruit," and "will undoubtedly run into billions of dollars," the report claims.

Total monetary savings to the Bureau of Aeronautics are given, as follows:

Curtiss-Wright Corp.	\$3,454,820
United Aircraft Corp.	
Pratt and Whitney Division	23,186,006
Hamilton Standard Propeller Division	8,236,926
Jack and Heintz, Inc.	1,649,885
Ranger Aircraft Engines Co.	144,000
General Electric Co.	83,282
Allen B. Dumont Laboratories, Inc.	1,920
Total	\$36,756,839

'Renegotiate Renegotiated Contracts'

The House Naval Affairs Committee, headed by Rep. Vinson (D., Ga.) recommends among other things in its latest report (1) that authority be extended the Secretaries of War and Navy to "renegotiate renegotiated contracts" and (2) that a statutory method of profit limitation be adopted.

The first recommendation, according to Committee spokesmen, is based on industry's complaint that contract prices, once reduced, cannot be raised if and when unexpected changes occur to increase calculated costs on contracts.

Whether profit limitation should be achieved through a profit-limitations law directly, excess-profits taxes, or some other means should be carefully considered by the proper committees of the Congress, the report states.

"In fairness, it should be stated that many contractors that have received excessive profits have done so through inadvertence—that is, the original cost estimates under their contracts were improperly calculated, thus returning a very much larger profit than was anticipated," the report points out. "Many of these contractors have voluntarily reduced their profits when the situation was called to their attention, either through direct refunds or reducing the prices on future deliveries."

Progress Summary

In a progress summation of naval aviation during the past year, the report points out as the most noteworthy accomplishment: "the transition from peace to war with a demonstration of the importance of aviation in naval warfare."

Vivid examples of the devastating effect of air power in naval action, and enemy success in the Pacific, the report states, first brought home to the American people and to the world at large the fact that the aircraft carrier had supplanted the battleship as the backbone of a modern navy.

The havoc raised with enemy forces in the two decisive actions of Midway and the Coral Sea—in which surface craft never came within effective range of their targets—"may be attributed almost entirely to U. S. naval carrier-based aircraft, in spite of some publicity to the contrary" the report claims.

It continues: "In anticipation of this very development, the Bureau of Aeronautics has through many years pursued with constant vigor the perfection of the carrier-type vessel, perfection of carrier-based aircraft and perfection of the specialized training necessary for the success of the carrier striking force. Realization of these objectives has occasioned the current carrier construction and conversion program which will provide the U. S. with the strongest offensive force in naval history."

"With full realization of the efficiency of the multi-engine land planes," the report declares, the Navy has procured sufficient numbers of this type aircraft to equip squadrons which now, deployed

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House Committee Overrules Budget On Navy Funds

A \$974,634,000 authorization for Naval public works construction, approved by the House, will provide for two new \$10,000,000 primary flight-training bases in Iowa and Kansas.

The House Naval Affairs Committee overruled the Bureau of the Budget recommendation of \$175,000,000 for aviation constructions and reported out a \$339,490,000 authorization, requested by the Navy Dept.

Chairman Vinson (D., Ga.) states that the committee "would rather follow the recommendations of the military men . . . than to follow the direction of the Budget."

The \$399,490,000 authorization for Naval aviation constructions is for:

(1) Facilities for operation stations, under which is included the expansion of existing operating stations as well as two new stations in the northwestern part of the U. S., a new station on the Gulf coast, a new air station in the Central Eastern States, a new station in the Southwest, two new stations in the Caribbean, a new station in the southern Pacific coastal area, new stations in Alaska and Hawaii, and a new station in the Middle Eastern States.

(2) The expansion of aviation training facilities, under which is included the two new primary training bases in the Midwest, and also the expansion of existing stations and primary bases, and a new glider base at a site yet to be selected.

(3) Lighter-than-air stations, under which provision is made for the expansion of all existing stations, for the establishment of 4 new continental stations and 5 new stations outside the U. S.

Senate Investigates Wage Stabilization

Hugh Fulton, chief counsel of the Senate Committee Investigating the Defense Program (Truman Committee) states that a subcommittee has left Washington to make an investigation of the wage stabilization and price ceiling problems confronting Los Angeles area aircraft manufacturers. The subcommittee composed of Senators Wallgren (D., Wash.), Hatch (D., N. M.), Herring (D., Iowa), and Burton (R., Ohio), met in Seattle on July 20, and proceeded a week later to San Francisco.



PIPER POINTS THE WAY TO WINGS FOR ALL AMERICA!



THIS is the inexpensive Piper L-4A, especially built for the Army. It has proved to be excellent for observation, communication and liaison work.

It is interesting to note that the Piper L-4A, like all Piper airplanes, burns only 5 gallons of gasoline an hour, and its tires weigh but twenty pounds and are good for about 100,000 miles.

This economy of vital gasoline and rubber, combined with the dependability and ease-of-flight inherent in Piper airplanes, has led to their use in ever-increasing numbers, not only in the Army, but in the Navy, the Civil Air Patrol and the Civilian Pilot Training Program.

In addition, Piper planes furnish the most economical and the easiest means of transportation for shuttle trips and for carrying passengers to supplement curtailed airline service.

In training pilots for commercial and private aviation Piper planes for years have held a most prominent place.



IN THE ARMY



IN THE NAVY



IN THE CPTP



IN THE CAP



IN COMMERCIAL AVIATION



PIPER AIRCRAFT CORPORATION
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ONE-THIRD OF ALL THE REGISTERED PLANES IN THE U.S. ARE PIPERS

IN THE DAILY

Ask the Service Bureau!

New subscribers to *American Aviation Daily* often ask about its Service Bureau. In brief, it boils down to this: The Bureau, manned by aviation's biggest news staff, will perform the errands you'd spend time, taxi-fare, telephone nickels, and shoe leather on if you were here in Washington. (And it won't charge you at all for many routine jobs—if you're a *Daily* subscriber. Non-subscribers are levied a small fee.)

Actually, the Bureau can accomplish far more per minute than the average visiting fireman because it has the know-how to circumvent the bewildering maze of departments, commissions, divisions, sections, branches and units that make up the war-time capital.

Here are a few services:

It will send you any public document from government or Congress, including current or back issues of *Congressional Record* and other periodicals, and including any bill, hearing or report.

It will make telephone calls to specific agencies to ask a question you want answered, and reply as you request—air mail, telegraph or telephone, charges reversed.

It will answer any query on facts of record or statistics which may be available in Washington without special research.

It will answer any question about the government personnel and administrative set-up, including titles and names of individuals, addresses, names of bureaus, precise designations of reports, dockets, cases, etc.

It will give you whatever additional information *AMERICAN AVIATION* has available on any news story appearing in the *Daily*.

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It will send you any press release, or text of new Federal regulations. Upon advance request it will notify you of any specific government action. It will answer any question which is a matter of record concerning the air transport or aircraft manufacturing industries.

For instance, within a few days recently we supplied data on Army Specialist Corps, Army contracts, Congressional bills, Vinson report, BEW export regulations, many OPA & WPB actions, CAB examiners' reports, FCC rulings, in addition to many verbal replies to phone queries.

Requests for government information need not be restricted to aviation subjects if you are a *Daily* subscriber. To become a subscriber, write *American Aviation Daily*, American Building, Washington, D. C. (free samples to executives).

—R. H. W.

Dirigible Advocates Urge Rigid Airships For Cargo, But Airplane Men Say No

USE of rigid airships for wartime air cargo operations is being urged by lighter-than-air advocates, who contend that for certain long range operations the big dirigible is superior to any available heavier-than-air equipment. Little hope is seen at this time, however, for a major building program along these lines.

While actually there is little that is new in the airship field, proponents are using the increasing need for cargo facilities, capable of offsetting the submarine menace, as a basis for renewing their arguments. Against these arguments is the attitude of a strong anti-lighter-than-air faction which may prevent for some time any wholehearted official approval of using dirigibles as cargo ships. In fact, it is understood that the WPB cargo committee report makes no recommendations for dirigible carriers.

Queries indicate that while a number of influential individuals are interested in the commercial possibilities of lighter-than-air ships and would like to see them given a more thorough trial, the majority of persons officially concerned with the entire air cargo situation show little inclination toward urging that airships be a part of the nation's wartime and postwar transportation system.

There are men in Congress, the armed services and in Washington agencies, who maintain files of data purporting to show the airship as superior to any available heavier-than-air equipment for certain operations. There are other men, and perhaps more of them, who hold that flying boats and long-range landplanes are now in production, or well along toward production, which can adequately fill all of this country's needs for domestic and international air cargo equipment.

Major Objections

A roundup of authoritative opinion discloses the following major objections raised against wartime development of airships for commercial use:

(1) Production of large dirigibles with facilities now available would be too slow a process to relieve the current transportation situation. It is generally felt that even with construction of new facilities, airships probably would not be available in appreciable quantity while the war shipping situation remained critical.

(2) Cost of an airship of satisfactory size would be greater than the cost of enough 4-engine landplanes or flying boats to provide equal cargo-carrying capacity.

(3) The difference in cruising speeds between airships and airplanes is too great to constitute a practical argument for the airship.

(4) A big dirigible presents too good a target to enemy air or ground fire.

Against these contentions airship advocates have replies. Some of the arguments given for commercial use of airships are based on operations of several years ago with the German-built Graf Zeppelin and Hindenburg, and with the several Navy-owned heavier-than-air ships. Others are based on more recent engineering developments and theories in the airship field. Still others are substantiated simply by faith in the airship. Among the major arguments offered in favor of wartime use of cargo airships are the following:

Advantages Claimed

(1) The airship should not be used in competition with heavier-than-air planes over short distances. Their best use is for long-range, trans-oceanic operations over distances which cannot be covered by landplanes and flying boats without fuel stops and possible delays for weather.

(2) A 10,000,000 cu.ft. airship, on a 5,000 mile non-stop flight, could carry at least 100 passengers and their baggage plus 20,000 lbs. of cargo. By flying the ship, for added lift, at a slight angle temporarily, and by adding part of the load from hook-on service planes after the airship is in flight, an additional 10,000 lbs. could be carried with only temporary and minor reduction in speed.

(3) Cruising speed, terminal to terminal, on such a 5000-mile non-stop flight could average 65 mph over the ground. This is held to be more than 50% greater than the average terminal to terminal speeds which flying boats across the Pacific have been able to maintain. Airship advocates contend that the dirigible, with its greater cruising range, and ability to fly around weather and to navigate meteorologically, can make up for much of the speed which present heavier-than-air equipment loses in refueling stops, layovers for weather, and other delays.

(4) As an example of the need for transportation service to somewhat offset greatly reduced steamer service, it is pointed out that airships operating between this country and points across both the Atlantic and Pacific, and points on both coasts of South America, could render an important service in keeping markets open and goods moving.

(5) It is estimated that if airships were ordered in quantity, unit cost would be in the neighborhood of \$6,000,000 for each 10,000,000 cu.ft. airship. Time needed to construct an airship fleet would depend on the extent and urgency of contracts let. Best available estimates, based on only one construction plant, are that the first such airship could be

in operation within 24 months of the granting of contracts; the second ship 6 months later, and successive units at intervals of approximately 4 months. Additional building facilities obviously would increase the rate of output.

(6) It is also pointed out that conversion of airships could be accomplished much more simply than conversion of heavier-than-air planes. Thus airships might be ordered now with the intention of using them as a naval operating arm, later converted with only slight changes for cargo work to military and naval outposts, and still later, after the war, changed into de luxe passenger carrying vessels.

(7) As for offering the enemy an excellent target, airship proponents say that a dirigible and equally a large flying boat, has no business operating in combat zones; that the flying boat isn't a bad target itself and probably exceeds the dirigible in area actually vulnerable to shell-fire; that an airship can be very effectively armed against aircraft attack; and that loss of an airport or seaplane base would more seriously interrupt operations than would loss of a temporary airship stopover point.

Differ on Materials

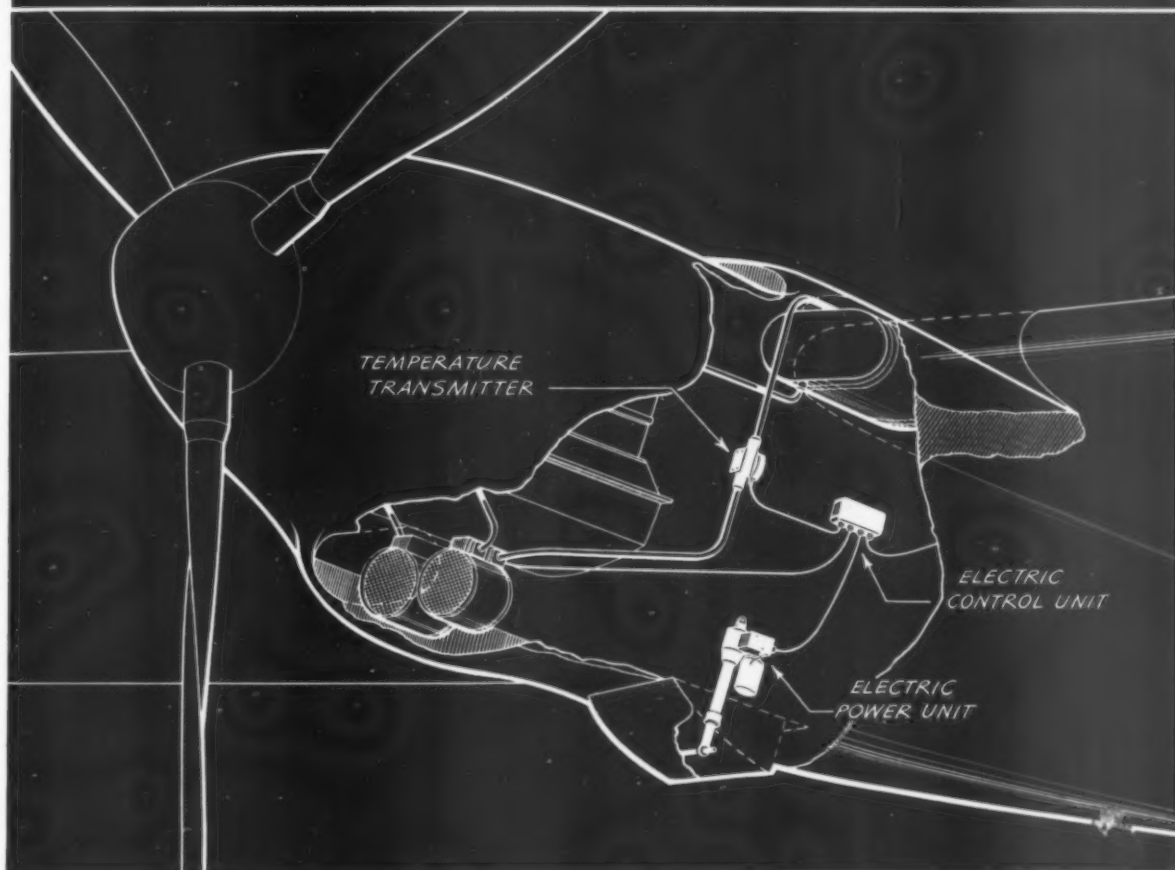
(8) The point is also raised that airship construction would draw heavily on already hard-pressed supplies of critical materials. Airship advocates call this a fallacious argument, stating that the airship is perhaps more adaptable than the airplane to substitute materials and that an airship program would require relatively modest amounts of materials of any kind.

Lighter-than-air advocates emphasize that they do not see the airship as a complete solution to our need for air strength. Their argument is that strictly for long distances they offer advantages in operating economy, payload, and regularity of schedules which cannot be provided by any heavier-than-air equipment likely to be available during the war or for some time thereafter.



Hurricane Bomber: Britain's Hawker Hurricanes are now equipped to carry bombs to increase their power in low level attacks on shipping and ground targets. The British state that the plane, powered with a 1,330-hp. Merlin engine, carries its extra load without appreciable loss of maneuverability.

Another cut in cooling drag!



— a system designed by aircraft engineers

AiResearch brings you Automatic Exit Flap Control

1. Closed flaps can often mean 10 to 20 extra miles per hour. 2. Automatic flap control provides plus protection for engines. 3. Relieving the pilot from manual control allows for greater concentration on gunfire.

To give U. S. military airplanes these three added "edges," AiResearch engineers in cooperation with military engineers have now developed a fully Automatic Exit Flap Control System.

AiResearch's new electrically-operated control system cuts open-flap time considerably, reduces cooling drag. In engine oil cooling, an overriding pressure control supplements thermostatic control, making this the surest-acting system yet developed.

And the simplest. Aircraft engineers designed it to operate without capillary tubes, syphon bellows or electronic circuits. AiResearch Automatic Exit Flap Controls are easily adapted to every type of airplane... may be

used on liquid coolant radiators as well as oil coolers.

Successfully flight-tested, this lightweight system is now in volume production. Military aircraft manufacturers may write or wire for details.



"Where Controlled Air Does The Job" • Cabin Pressure Regulating Systems • Prestone Radiators
Engine Oil Cooling Systems • Engine Air Intercoolers • Supercharger Aftercooling Systems

Orphan CAP Plagued by Many Ills But Keeps Up Its War Services

Many Planes Grounded by Lack of Parts

A STORY of grounded planes, low priorities, draft board trouble, inadequate auto gas rationing cards and Federal bungling on pay allowances is being told throughout eastern private flying circles about the highly valuable but officially-neglected Civil Air Patrol.

Also being discussed is the impossibility of securing satisfactory priorities on spare parts for Civilian Pilot Training planes. Result is that these planes, and those of CAP, are being grounded for lack of parts.

Some officials are emphatic in their statements that CAP activities will remain in somewhat of a mess until such time as the Army officially recognizes the Patrol's worth and goes to bat for it in the right places.

At one CAP base on the east coast, 30% of the planes were out of commission in mid-July because of the inability to get parts or major overhauls. Others were expected to

join them as things went wrong. An A-3 priority for parts was considered a triumph at the base, although it must be added that the old A-1-j had been obtained by CAP.

(CPT also obtained A-1-j, but two high officials agreed that this rating was worthless. A higher one is to be sought for CPT.)

"When you see planes lined up without propellers or engines and know that when others become defective they can't be repaired, one can see why the personnel sometimes get discouraged," a CAP observer commented.

Some planes on coastal patrol are in the air six to seven hours daily, and are constantly taking off loaded in excess of the gross load specified by CAA, observers report, expressing the belief that CAP needs larger equipment. The Army, they argue, might well furnish some advanced trainers.

On the other hand, the Office of Civilian Defense is said to turn thumbs down on the idea of using Army equipment, believing that this would be a step toward removing CAP—and its publicity—from OCD jurisdiction.

Although receiving no salary, CAP personnel get \$5 to \$7 a day allowance. At an east coast base, bungling on someone's part resulted in the checks being six weeks late.

Not helping morale is the draft board situation in some localities, where CAP members are being drafted regardless of the fact that

they are daily risking their lives on patrol. How widespread this situation is has not been reported. Policy varies among draft boards.

Under the temporary gasoline rationing system, some pilots were unable to get more than an A card. In some communities, however, CAP members report better success. How ration boards will react under the new more stringent coupon system remains to be seen.

The job that CAP is doing with the tools it has is said to be excellent, but observers emphasize that it could be increased a hundred-fold with official recognition of the Patrol in military circles.

How CPT will fare remains to be seen. Inability to secure necessary spare parts has become more acute recently, and a higher rating will be sought.

CPT is not worried at this time about securing new planes, believing that an adequate number will be available from private owners. The problem of keeping what planes they have in flyable condition is the big worry of CPT officials.

Eaker in Charge Of U. S. Overseas Bomber Command

Brig. Gen. Ira C. Eaker has been named chief of the United States Army Bomber Command in the European theatre.

Second in command to Maj. Gen. Carl Spaatz, also recently appointed,



Gen. Eaker

Gen. Eaker for the past two months has been preparing his men for the task of blasting an invasion path in Western Europe. He has been attached to the Army Air Forces since its World War I days.

It was Gen. Eaker, with his present superior, Gen. Spaatz, who piloted the Army "Question Mark" plane which in 1929 established an endurance mark record of 150 hrs, 40 minutes.

The new European Bomber Command chief is co-author of three books on aviation, collaborating the work with Lieut. Gen. Henry H. Arnold, Commanding General, U. S. Army Air Forces.

No Airmen in Important Navy Posts, Writer Claims

AN ALL-OUT blast against the Navy Department for not permitting Naval airmen to sit in the Navy's inner councils, and calling for a "major shake-up" of America's war organization, was published in a front-page signed article by *The Washington Post* on July 19. The article was written by John G. Norris, staff writer and member of the Aviation Writers Association.

"Airmen have little to say in running the Navy today," Norris wrote. "They bear the brunt of the fighting and win the battles, but the old-line admirals still command the fleets and tasks forces and fill the key staff jobs here. The naval airmen are not getting a fair deal. More important, neither is the nation."

Norris revealed the following:

"None of the Navy's top-ranking officers—admirals and vice admirals—now holding active sea commands, is a naval aviator. A few, three or four at most, of the 20-odd officers of these ranks, are airmen, but they are not now regularly at sea.

"Less than one-eighth of the officers serving on the staff of the Commander in Chief, United States Fleet, and in the Office of Naval Operations, are aviators.

"None of the carrier task forces which are fighting the war for the Navy in the Pacific are headed by airmen, as far as can be learned. Only two flying admirals have been given these essentially air posts in the war to date.

"The appointment of Rear Admiral John H. Towers, Chief of the Bureau of Aeronautics and a pioneer flyer, to be Assistant Chief of Naval Operations, with rank of vice admiral in charge of all air matters, has been rescinded. A reorganization plan of which this was a part has been shelved."

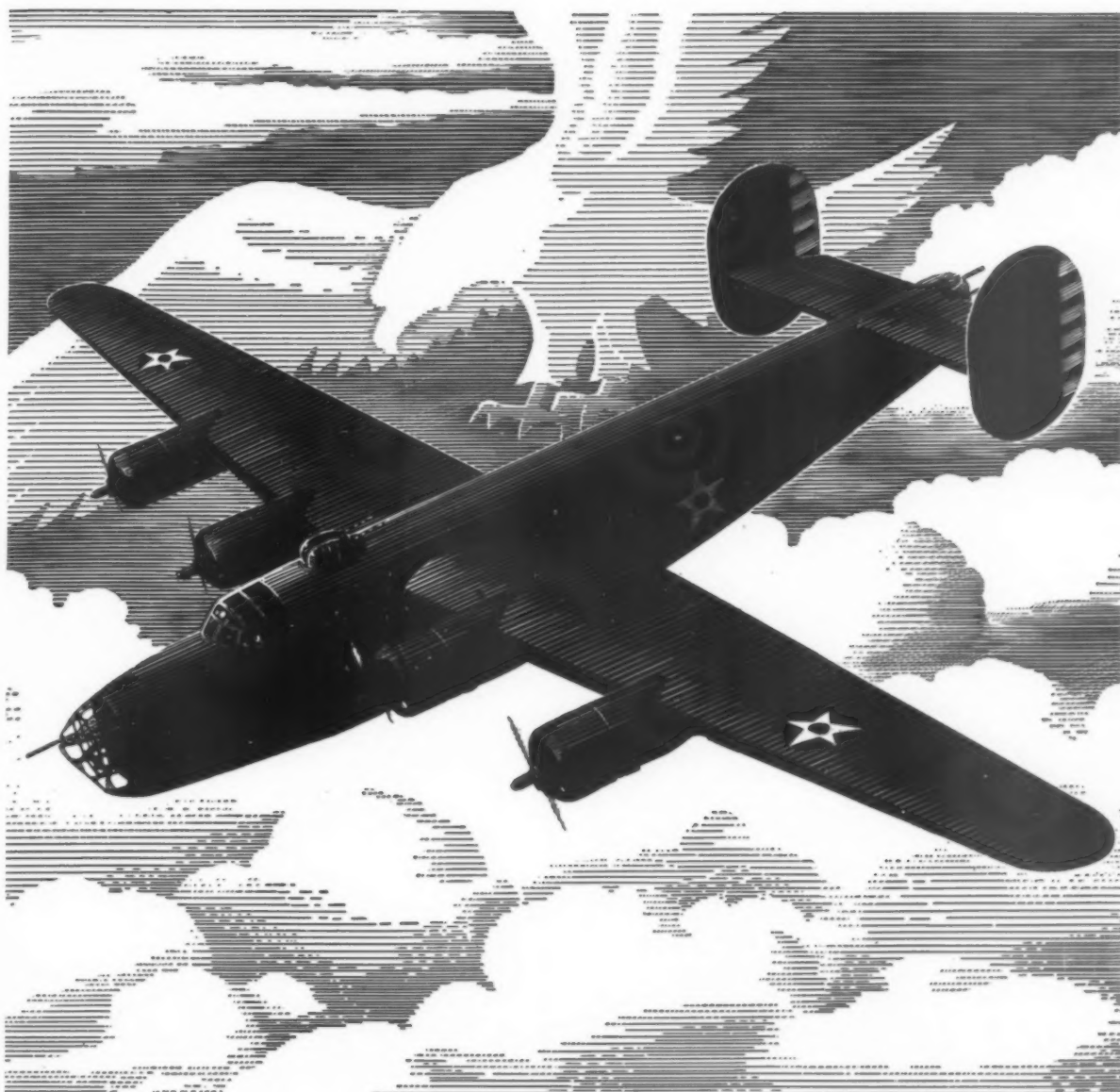
Norris contrasted the Navy situation to that of the Army where half of the officers of the Army General Staff must be airmen as laid down by last winter's policy.



Russian Buster: Enterprising British Air Ministry scooped U. S. press and government photographers with this shot of the Russian bomber which carried Soviet Commissar Molotov to London and Washington. It is shown at a Scottish airdrome.

FINE AIRCRAFT ENGINES

★ AIRCOOLED MOTORS CORP., SYRACUSE, N. Y.



Now we make it official... *The Liberator*

WE always thought of her by her U. S. Army designation—the Consolidated B-24.

We were so busy setting up the industry's first big-bomber assembly line . . . and passing our mass-production experience on to other

manufacturers . . . that we didn't worry much about a name for the B-24.

Then we discovered she had already *won* a name. The British were calling her the Liberator. The American newspapers picked up

the name and passed it on to the public. Presently we found that even we ourselves were calling her the Liberator.

So, from now on, Liberator is official. *Consolidated Aircraft Corporation, San Diego, California.*

CONSOLIDATED *builds Battleships of the Air*

Gen. Drum's Ban on Eastern Flying Expected to Force Air Schools Inland

Airliners OK'd;
Total of 117
Fields in Area

THE long-expected restriction of civil and air training flights along the Eastern seaboard was effected by Lieut. Gen. Drum, commanding general of the Eastern Defense Command, in a general order dated July 16.

Although many details remain to be ironed out, the Civil Aeronautics Administration declared that 117 designated airports and fields are in the affected area but their status on July 24 was still undetermined. Many will be closed and flight operators engaged in instructional activities probably will be compelled to move inland, as was done on the West Coast immediately after the start of the war. Airline flights are permitted to continue. Status of Civil Air Patrol was in doubt, although it was expected to continue.

The full text of the regulation, designated General Order No. 26, signed by Gen. Drum's chief of staff, Brig. Gen. K. P. Lord, is reproduced below:

REGULATIONS FOR CONTROL OF FLYING IN THE VITAL DEFENSE AREA

1. War Dept. Circular, dated Mar. 11, 1942, Subject: "National Policy of Air Defense Regulations and General Flight Rules," establishes within the Eastern Defense Command, the "Eastern Air Defense Zone," which comprises the airspace extending along the Atlantic Coast from the United

States-Canadian border to Key West, Florida, thence north along the west coast of Florida to the Apalachicola River, and from the shoreline extending 200 miles seaward and 150 miles inland. Said Circular prescribes further that: "Additional special restrictions within active defense zones may be imposed by responsible defense commanders as military or naval situations demand." Pursuant to authority of said Circular, these regulations are issued as necessary to make possible an effective defense against enemy air attack.

2. That portion of the Eastern Air Defense Zone east of the line: WESTON, Maine—SEBAGO, Maine—GRAFTON, Mass.—PAWLING, N. Y.—SUSSEX, N. J.—POTTSVILLE, Pa.—MIDDLEBURG, Va.—FRANKLIN, Va.—COROLLA, N. C.—and the area extending 200 miles to sea is designated a "Vital Defense Area," hereinafter referred to as the Area, within which the operation of aircraft is prohibited or is authorized subject to the conditions prescribed herein or hereafter. That portion of the Eastern Air Defense Zone not included in the above defined Area will be covered in future regulations.

3. The following activities jeopardize the air defense of the Area. They shall be discontinued at the earliest practicable date: (a) Civil flying training, including Civil Pilot Training Schools. (b) Civil photographic, news, commuting, pleasure, and other miscellaneous civil flights. (c) Army and Navy primary, basic, and advanced flying training, other than operational training.

4. All other flying, Army, Navy and Civil, within the area, is restricted to that which is necessary to the war effort. On local flights, aircraft shall remain as close to the airport as practicable, and in all cases within 5 miles of its centers. For these local flights, no flight plan is required.

5. (a) All aircraft intending to fly outside a 5 mile radius from the center of the airport shall submit a flight plan and receive approval thereof before take-off. (For exceptions, see Paragraph 10 b.) In flight they shall adhere strictly to the flight plan as approved, and shall comply with all rules governing flights which are or may be prescribed by the Civil Aeronautics Administration. The flight plan shall contain the following data: (1) Local flight plan number. (2) The aircraft identification number or the name of the governmental service in which the aircraft is employed, if so employed, or the name of the carrier operator and the trip number, if engaged in a scheduled air transportation service. (3) The type of aircraft involved and the number of aircraft making the flight, if the aircraft are in formation. (4) The name of the pilot, or the flight commander if the aircraft are in formation. (5) The point of departure of the particular flight for which such plan is being filed. (6) The proposed cruising altitude or altitudes. (7) The point of first intended landing. (8) The proposed cruising airspeed. (9) The radio equipment carried in the aircraft. (If no radio—NORDO; if radio receiver only—RONLY; if 2-way radio, a statement of transmitter frequency to be used). (10) The proposed time of departure. (The time of departure shall be considered as the time when the aircraft leaves the ground.) (11) The estimated elapsed time until arrival on the ground at the point of first intended landing. (For scheduled operation, the first stop to be made, together with additional stops if requested by an airway traffic control center.) (12) The alternate airport, if the flight is to involve instrument flight. (13) The route and any

other pertinent information which the pilot deems useful for control purposes or which may be requested by an airway traffic control center. (14) Purpose of flight or mission.

(b) The flight plan shall be submitted to the regional Information Center in whose area the flight originates for approval as prescribed in Paragraph 5 a supra, of these regulations.

6. The airways for a distance of 30 miles in all directions from the following radio range stations are narrowed to a width of 6 miles: PORTLAND, Me.; BOSTON, Mass.; PROVIDENCE, R. I.; HARTFORD, Conn.; ELIZABETH, N. J.; PHILADELPHIA, Pa.; WASHINGTON, D. C.; NORFOLK, Va.; CHARLESTON, S. C. All civil air carriers operating within 30 miles of the above named radio range stations shall make certain that no passenger can see the ground until the aircraft has landed or has reached a point beyond this 30 mile limit.

7. Each flight originating outside the Area shall enter the Area on a civil airway, proceed along the airways to the point nearest the destination, then proceed direct to the destination. Each flight departing the area shall proceed direct to the point on the airways nearest the point of departure, then proceed along the airways until outside the Area.

8. Aircraft on point to point flights within the Area, other than those on missions in defense of the Area, shall follow the civil airways except when the Regional Commander concerned determines that the route between the point of origin and the destination is so circuitous as to render such procedure impracticable. Requests for exceptions in these instances shall be made at the time of filing flight plans.

9. When an "alert" or "Air Raid Alarm" is ordered, the following restrictions shall govern all non-combat airplanes, and combat airplanes other than those directed by competent military or naval authority to intercept or attack the enemy:

(a) Airplanes on the ground shall remain on the ground; (b) Airplanes flying locally shall land immediately. (c) Airplanes flying on flight plans shall land, turn back or proceed as directed by the Commanding General, Fighter Command.

10. (a) All aircraft authorized, under the provisions of Paragraph 4 of these regulations, to operate within a 5-mile radius of the airport, shall first obtain a clearance from the appropriate Army, Navy, or Civil authority before take-off. The clearing authority shall maintain a record of clearances and upon request, shall furnish the Commanding General, Fighter Command, with data concerning the number of airplanes flying within the 5-mile radius. (b) Army and Navy emergency flights, as defined in Paragraph 14 a (4), WD Cir., Mar. 11, 1942, may take off without an approved flight plan when necessary. The Commander responsible for the dispatch of the flight shall report flight plans data without delay to the Regional Information Center concerned by direct line, if available; otherwise through the CAA communications. (c) Emergency variation from the approved flight plan which affects the route, altitude, or time in excess of 10 minutes by radio to the nearest Army, Navy or Air Force, shall be reported without delay CAA Airways Communications station for transmission to the nearest Regional Information Center, except when such transmission will jeopardize the successful completion of the mission.

11. No person or agency, other than



It Flew Home: Battered 14-cylinder Wright Cyclone brought a crippled Douglas Boston back to Britain after a daylight raid in France. The Boston's other engine was shot away, bombardiers and gunners were killed at their posts, and the pilot died of wounds after landing. There are three shell holes in nose section, and machine gun bullets riddled ignition harness, cylinder head fins. One bullet went through the steel barrel of a cylinder. Supercharger housing was battered; one magnet was shot away.

AWPC Eliminates 1,860 Bottlenecks

The Aircraft War Production Council, Inc., operating in Southern California, takes credit for eliminating 1,860 "potential" bottlenecks in warplane production during the month of June. Eight major aircraft plants are served by the firm.

Through interchange of engineering reports and materiel, production was kept going at full speed. In the month covered by the report there were 1,557 such exchanges in materiel, 132 engineering reports and 171 library references to technical reports.

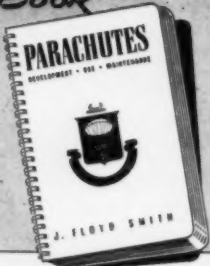
the Commanding General, Fighter Command, may establish channels of air traffic, restricted air areas, prohibited air areas, danger zones, identification stations; nor issue instructions, restrictions, or regulations governing air traffic within the described Area.

12. Authority to order blackouts and to suspend radio broadcasts and other radio emissions is hereby delegated to the Commanding General, Fighter Command.

13. All persons, military or civilian, except members of anti-aircraft artillery units, are prohibited from firing at any aircraft, balloon, or dirigible, or at any parachutists, unless it or he be first positively identified as enemy. NOTE: Anti-aircraft artillery units have separate specific instructions to govern their actions.

14. Aircraft violating these regulations will be intercepted and forced to the ground by pursuit aircraft. Disciplinary action will be taken against military personnel. Civilian personnel involved will be prosecuted.

IF YOU FLY—
You Need this Book



VITAL information on development, use and maintenance of Parachutes. 90 pages, 49 illustrations. Compiled and written by J. Floyd Smith, leading authority, inventor and pioneer parachutist. Invaluable to pilots, flyers, paratroopers. Sent post-paid for \$1.00.

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THE CURTISS-COMMANDO

*gets there **FIRST** with the **MOST!***



SECOND PRINTING: Send 10¢ for your copy of this fascinating 96-page history of aviation by Aspen Jordanoff, author of "Your Wings", with illustrations of current fighting types. Airplane Division, Curtiss-Wright Corp., Buffalo, N. Y.



To turn the tide, to win victory, America must have the means of moving large numbers of troops, supplies, tanks, guns, swiftly to critical and remote theaters of battle.

A new and revolutionary factor in this war of distances is the Curtiss-

Commando, the world's largest twin-engine transport. These giants of the air now are telescoping weeks into hours, and can perform prodigies in mass movements of men and materiel. Now America can "get there first, with the most!"

CURTISS-WRIGHT *Corporation* AIRPLANE DIVISION



1920• Curtiss Eagle, first inter-city "liner," 400 h.p., 10 passengers, 105 m.p.h.—64' wingspan.



1928• Curtiss B-2 Condor Bomber for the U. S. Army. Greatest weight carrying airplane of its time. Heavy defensive armament. Two Curtiss Conqueror engines.



1929• Curtiss Condor, 2 pilots and 18 passengers, 139 m. p. h. high speed, two 600 h.p. Curtiss Conqueror engines.



1933• Curtiss Condor, the first sleeper plane—6 compartments, each with 2 berths, two 720 h.p. Wright Cyclone engines, 167 m.p.h. cruising.

Beechcrafts are doing their part



Above: AT-7 Beechcraft in flight. Below: AT-11 Beechcrafts on the Production Line

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Troop Carrier Command Will Utilize Gliders

A Troop Carrier Command of the Army Air Forces has been organized to fly fighting men and their weapons and supplies in theatres of operations and large gliders and transports are already in wide use in the tactical training of Army air-borne combat teams, the War Department announces.

"Glider pilots and air-borne combat troops will be in the forefront of attacks," the announcement said.

"The importance of these swiftly moving combat teams cannot be overestimated."

Parachute troops, also members of the air-borne attack forces, frequently will be transported in the large planes which power the gliders in combat areas.

"This will be a self-contained force whose soldiers, equipment and supplies are all transported by air. It will be able and trained to strike the enemy where he is least prepared."

"Although many details must be kept secret concerning its exact size, composition, tactics, objectives and when and where it will strike, it can now be revealed that in size, equipment and firepower the air-borne army ultimately will exceed anything of the kind the world has yet seen."

Disclosing that several tactical stations, under command of the new Troop Carrier Command, are being established to augment preliminary and advanced glider pilot schools which are already functioning, the War Department said that Col. Fred S. Borum, Air Forces, will be commanding officer with headquarters at Stout Field, Ind.

"Graduates of the glider training courses will join other units of the air-borne army forces at the tactical stations to conclude their training co-ordination with the combat groups. The Troop Carrier Command, which has command of the gliders in theatres of operations, is formed in squadrons, groups and wings."

Timely Suggestion

Suggests Thomas R. McCrea, in a letter to the editor of *The New York Times*:

"The British are doing well with the Kittyhawk bomber. . . named for the village where the Wright brothers prepared for the world's first flight by heavier-than-air craft."

"The first actual flight was made from . . . Kill Devil Hill, upon which now stands the Wright Brother's Memorial."

"In this war there will doubtless be a single plane which will effectively get Hitler, Mussolini or Hirohito. Or we might develop a plane mightier, faster and more destructive. . ."

"It might be well for us to name this mighty craft the Kill Devil."



Waco Glider: First photo of Waco's new 9-place training glider, a few units of which have been delivered to Army Air Forces' experimental glider unit at Wright Field. Shown just before a tow-takeoff are practice troops. Cost is \$10,000 to \$12,000 per ship. Construction is speedier than for aircraft and non-strategic materials are used. (AAF Photo).



British Hotspur: Gliders are pouring from British factories in "many shapes and sizes," The Aeroplane reports, all of them "built for a short life. Some will make return journeys but the majority will be left where they land" in the Great Invasion. Shown here is one trainer model, the Hotspur, of General Aircraft, Ltd. Only instruments are air speed, turn and bank, and rate of climb indicators, and altimeter. Load capacity is not revealed.

Army-Navy Bulletins

RAF Praises P-51: RAF pilots are enthusiastic in their praise of the "speed, maneuverability and endurance" of the North American P-51 Mustang fighter plane now being used in low flying attacks on the enemy, according to press reports. The Mustang is an all-metal, single-seater, low-wing monoplane, powered with a liquid-cooled engine.

Iowa Naval Base: Ottumwa, Ia., has been selected for a new Naval reserve aviation base with a capacity for 800 cadets. Construction starts immediately and first student flyers are expected to arrive early this winter.

New AAF Command: Foreign Service Concentration Command to train Army Air Force units going overseas will be established in Cincinnati, O., early in August, with Gen. William Ord Ryan in charge, the War Dept. discloses. Headquarters for the 125 officers and men of the command will be at Lunken Field, Cincinnati. Col. Harry A. Johnson is chief of staff.

Joint Recruit Drive: Army, Navy and Marine Corps representatives are now touring the country conferring with educators on plans to coordinate recruiting of college students for the armed forces' various officer-candidate classes. Programs involved include the Army's Enlisted Reserve Corps and Air Force Enlisted Reserve programs, the Navy's V-1, V-5 and V-7 programs, from which the Navy obtains its reserve officers for aviation, deck and engineering duties, and the Marine Corps candidates' class for officers.

Growing Wings: Reported to be the largest in the Navy's history, a group of 518 fledgling flyers recently began training at the three Naval intermediate flight training centers in Pensacola, Fla., Jacksonville, Fla., and Corpus Christi, Tex.

For Norway: A Fairchild Trainer loaned by the U. S. Army left LaGuardia Field July 15 on the first lap of a country-wide drive to raise \$300,000 for trainers to be used by Free Norwegian flyers training in Canada.

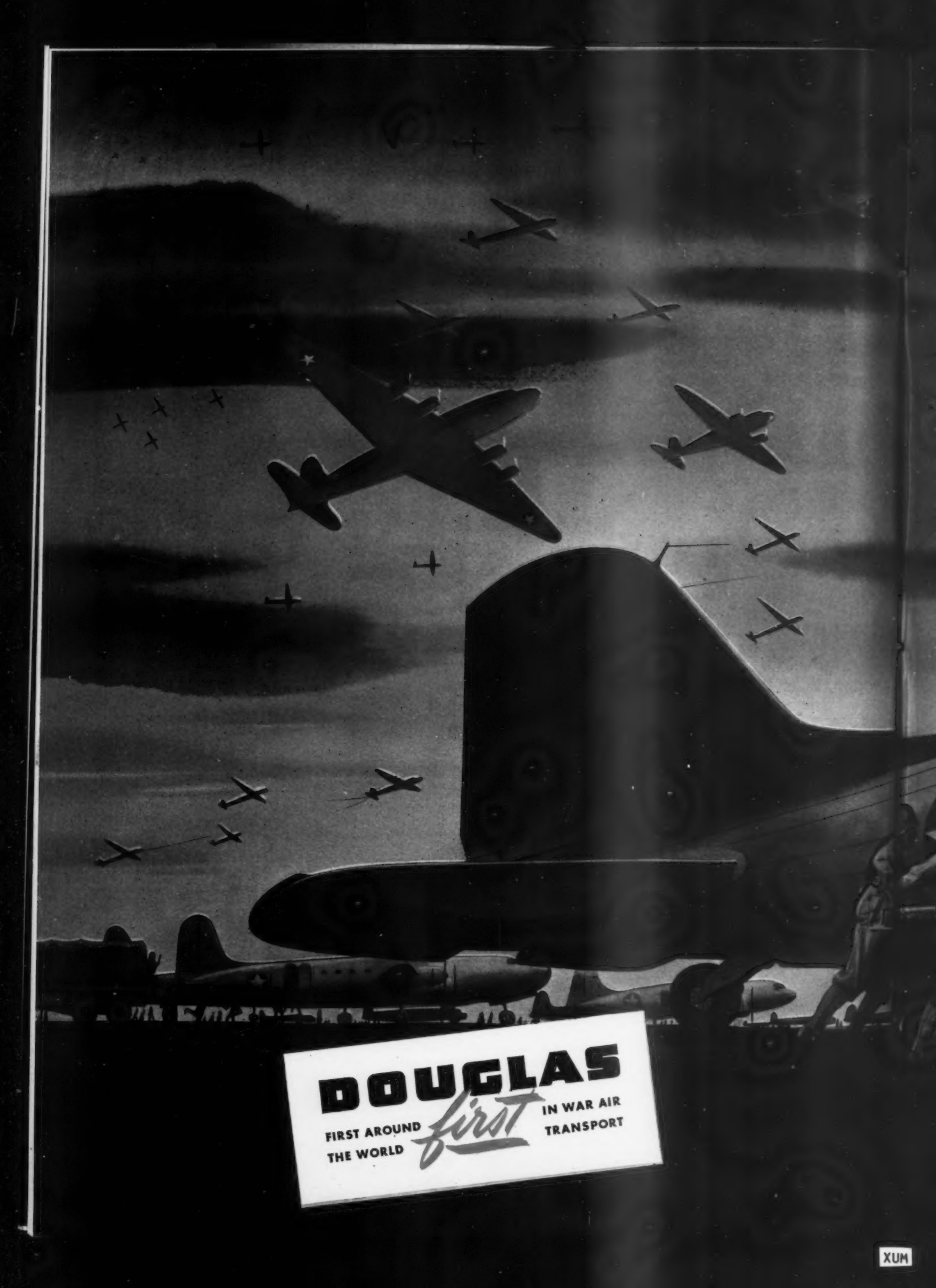
Kansas Base: Navy Dept. will establish a new Naval Reserve Aviation base at Hutchinson, Kans., to provide additional facilities for 800 student aviators as a part of the 30,000 pilots-a-year program.

New AAF School: Another Primary training school for the Army Air Forces opened this month "somewhere in Louisiana," under civilian contract to Page Airways and Hyland Flying Service.

New Service Act: Under terms of the new Naval Service Law permanent promotions of officers of the Navy, Marine Corps and Coast Guard, together with their reserve components, have been suspended, effective until June 30 of the fiscal year following the end of the war. Only exceptions are officers already selected for higher rank and now awaiting permanent promotion, or those officers who became eligible for promotion through length of service prior to July 1, 1942. A circular explaining the law in detail will be sent shortly to the Naval Service. Existing law concerning the transfer of aviation cadet training graduates and Naval R. O. T. C. graduates is modified in that these officers are now eligible for transfer if now under 25.

Boiled Down: War Dept. announces it has simplified its 1,500-page War Dept. Procurement Regulations into a single volume of 100 pages.

Color Shots: Color photographs from altitudes of five to six miles are predicted by engineers now working to perfect use of a three-lens camera.



DOUGLAS

FIRST AROUND
THE WORLD

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IN WAR AIR
TRANSPORT

Taking the Ax to the Axis

With a growing armada of combat transports we'll fly the war
to the enemy wherever he may be. In this grim task Douglas cargo
carriers and troop transports are playing an ever increasing role.



DOUGLAS AIRCRAFT CO., INC.

Member, Aircraft War Production Council, Inc.

Army Assigns World Routes to U. S. Lines

(Continued from page 1)

motion a national training program for pilots, mechanics, flight engineers, and other personnel to man the extended routes.

Companies involved in the new program are American, Braniff, Eastern, Northeast, Northwest, Pan American, Transcontinental & Western Air, United, and Western. Some of the foreign operations of these lines are already underway, but they will be greatly expanded in August.

The remaining domestic lines will be brought into the enlarged picture shortly, it was indicated. All except one U. S. line have held continental cargo contracts with ATC for weeks.

The lines will carry mail, express and other cargo and personnel to every one of the combat areas of the United Nations. The companies are to furnish their own pilots, navigators, mechanics and some other personnel to be trained in their own schools.

"We had a job to do and we needed their organizational genius to do it," Gen. George told reporters at a press conference. "We told them where we would like to have them fly and asked each of them where he could operate best. They have responded 100%. The only limit is their ability to expand."

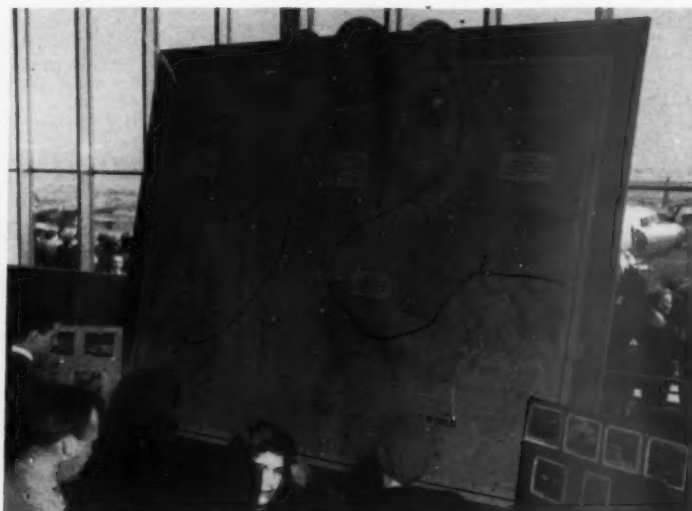
"The routes have been adjusted to use to the maximum each line's flying experience and the locations of their maintenance bases. However, the entire world-wide set-up as it is expected to be arranged is subject to change. If the weight is thrown in any one area due to the progress of the war, we shall shift the airlines accordingly."

"The lines are not going to get any vested interests on any route during wartime."

Army Won't Take Over

The General said emphatically: "If there is one thing the Army is not going to do it is to take over the airlines. We would militarize these foreign operations only at the lines' saturation point. We would rather have the Army men operating over Germany instead. We will control all operations but the flights will be made by the airlines as separate entities. This is the beginning of a stupendous undertaking and it will be done admirably by our airlines. I always knew the airlines could be called upon. They have done a marvelous job for us."

At this point, the General reminded newspapermen that even



Domestic Airlines Traverse the World

This map and photograph, approved by Army Air Forces, show general routes to be flown by eight domestic airlines and Pan American Airways under contract with Air Transport Command. One route, not shown, may be mentioned—to Central America. Map was displayed at Washington National Airport. (Army Air Forces Photo).



Rare Photo: Nerve Center of Britain's Atlantic Ferry Service showing a WAAF (equivalent of U. S. WAAC) corporal plotting the hour by hour position of flying craft. The Service operates Consolidated Liberators which carry freight and other cargo eastward and return to Canada loaded with ferry pilots. Also shown is a Liberator just after a non-stop Atlantic hop.

now the AAF is doing no air cargo work within the continental U. S., this also being done by the lines.

Although compensation was not explained at the press conference, the General asserted that "this is not a gratuity; we are not asking the lines to operate this vital service at a loss."

Present commercial schedules will remain practically unchanged, it was said, with only a few minor revisions likely in schedules or routes within this country.

The Army Air Forces will ferry

combat planes along these routes.

Gen. George hinted that requirements for pilots on ATC routes will be eased when he said "I think there are undoubtedly a large number of men who, with a little conditioning, can be used by the airlines as co-pilots." He said CAP pilots might be one reservoir, but added that he believes there are many more reservoirs of civil flyers. He also stated the belief that the airlines can advance many of their present co-pilots to pilots.

Asked concerning the possibility

of air transportation taking over more and more of the load on surface shipping facilities, the General asserted that the best that could be expected of ATC is that it will take more of the top priority material and, as new flying equipment becomes available, move greater and greater quantities of vital shipments.

Asked about the Kaiser plan for mass production of flying boats, the General preferred not to comment on specific recommendations but pointed out that "I'll use anything that can carry cargo." He expressed a general preference for landplanes, however, citing the need for planes which can penetrate into midcontinental areas and which will not be restricted by icy harbors. "The bug-aboo that landplanes cannot operate over long stretches of water was exploded long ago." However, any decision on a great quantity of flying boats "must be left up to a higher policy maker than I am," he said.

New Personnel Policy

The ATC program for the airlines appears to solve the lines' problem of reserve personnel. It is understood that any branch of the Army which wishes to call one of its reserves, who may be employed on the airlines, to active duty, must file a request with Gen. George. In this way, it is believed that the lines will be able to keep needed men.

Also attending the press conference were Col. Edgar Gorrell, president of Air Transport Association, and executives of the industry.

Text of Statement

The following statement was released at the press conference:

"The civil airlines of the country will undertake vastly increased international operations under the Air Transport Command, Army Air Forces, it was announced today. This expansion will not affect the airlines present commercial schedules, which are being continued under the private management of the companies."

"In a meeting with air carrier executives, Brig. Gen. Harold L. George, commanding general, Air Transport Command, asked them to extend their operations immediately to take care of mounting air transportation problems of the war program. Routes will be strengthened and extended, carrying personnel, materiel and mail throughout both hemispheres."

"Under this plan, substantial numbers of additional aircraft will be assigned to the airlines by the Army Air Forces, beginning in August."

"This action means that the Air Transport Command intends to utilize the airlines to the limit of their capacities. If the program does not make use of the full services of any individual carrier this company will be given an opportunity to expand to the extent of its available facilities."

"This air move is made in accordance with the Presidential directive to the War Dept., announced May 15, which provided for the maximum use of airline organizations and personnel in the war program. The policy at the same time is intended to preserve the benefits to be derived from the continuance of established airline organizations."

"Routes over the world to be flown by the various airlines will be prescribed by the Air Transport Command, and the operation over these routes will be under the direction of the Command. The aircraft assigned to the individual companies will carry the Army Air Forces, Air Transport Command, insignia . . ."

BENDIX AVIATION, LTD.

TAIL LIGHT FLASHER



*Approved for operating
intermittent tail lights
under new C.A.A. regulations*

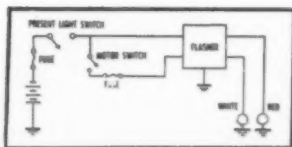
Completely meeting the new C. A. A. regulations for intermittent tail light operation in commercial air carriers is the Bendix Model 3990 Tail Light Flasher which is now in production.

The Flasher, which combines accuracy with long, trouble free operation, is a light weight unit of rugged, simple design. The flashing mechanism produces 40 red and white light cycles per minute. Any deviation from this closes an emergency circuit lighting the white light continuously.

All circuits in the Flasher are filtered to prevent interference with radio equipment.

Tungsten points are used in the flasher-switch.

The entire unit is enclosed in a dust and moisture proof container yet inspection is quickly accomplished by removal of two wing bolts and a single AN plug. The Flasher draws only six watts and can be supplied for 12- or 24-volt systems. The unit weighs 2.1 pounds and measures $4\frac{3}{4} \times 3\frac{3}{8} \times 6$. Because of the approaching deadline for installation of this equipment orders should be placed as soon as possible



BENDIX  *North Hollywood*
SUBSIDIARY OF BENDIX AVIATION CORPORATION

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VACUUM SWITCHES • FABRICATION OF ELECTRICAL CABLES • INTERFERENCE FILTERS • INSTALLATION ENGINEERING • HYDRAULIC AIRCRAFT UNITS



You CAN AUTOGRAPH THIS BOMBER!

Every few minutes (our enemies would like to know *exactly* how often), another airplane is completed at one of North American Aviation's great plants.

Sometimes, one of our workers gives it a personal finishing touch. He paints on the fuselage a single parting word—"Tokio," "Berlin" or his own initials.

We want *you* to be as proud of these planes as we are at North American. We'd like to put your name on one of these planes because *you're* helping to pay for it by buying War Bonds, and by paying taxes.

Here's how you can autograph one of the planes pictured above: Mail us a penny postcard, with your name and the serial number of the next War Savings Bond you buy. Address North American Aviation, Dept. F, Inglewood, California.

And we'll write your name on a plane destined to smash the Axis.

Perhaps your name will go on a North American B-25 Bomber like the first Army plane that sank a U-boat in the Atlantic, and first carried the war to Tokio.

Perhaps your name will fly with a deadly North American fighter, like those that have downed Messerschmitts and Jap Zero fighters alike.


We want *you* to feel the same glow

of pride we feel, every time another plane rolls off the production line. We want *you* to be a member of North American's team.


You are the men and women we're working for, because *you* are the United States of America—130,000,000 strong . . . fighting, saving, and working together to do history's biggest job.

NORTH AMERICAN AVIATION, INC.
Main Plant, Inglewood, Calif.


**NORTH
AMERICAN**
Sets the Pace



FIRST to bomb Jap positions in the Philippines were North American B-25s.



FIRST to deliver a plane under National Defense contracts.



BONDS BUY BOMBERS!
When you buy War Savings Bonds you're buying planes for victory. Buy Bonds each payday!

JOIN THE ARMY OR NAVY AIR FORCE

BOMBERS



FIGHTERS



TRAINERS



★ For the United Nations B-25 (the "Mitchell") ★ For U. S. Army and RAF "Mustang" ★ For U. S. Army AT-6A . . . For U. S. Navy SNJ-3 . . . For RAF "Harvard" ★

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WPB Summary

CANCELLATION OF PLANT CONSTRUCTION contracts, such as has happened recently in shipbuilding, is not probable for the aircraft industry. However, officials won't say it can't happen.

PLANE ENGINE FORGINGS, amounting to nearly 800 tons, have been seized by WPB. They had been prepared for shipment to France before the war.

TO PROMOTE SALVAGE under uniform procedure in manufacturing plants, a Technical Advisory Board has been named for the Industrial Salvage Section of WPB's Conservation Division.

FORM PD-25A must be filed with WPB not later than August 10 by firms requiring priority assistance for the 4th quarter under PRP. PD-25A has been simplified, and Form PD-275 eliminated.

DELIVERY DATE procedure on rated orders has been simplified to permit delivery where there is conflict to the order first received, regardless of date specified on the second order.

CANADIAN COMPANIES have been put on the same basis as American companies insofar as WPB's classification of the end use of their products is concerned.

THERMOPLASTICS MANUFACTURERS' operations will not be placed under scheduling until August 15, rather than July 15.

QUESTIONNAIRES TO MANUFACTURERS from various government agencies may be further simplified and reduced in number by appointment of a special group to represent industry on WPB's committee to review all requests for information.

A COMMITTEE ON CHEMICAL PROCESSES has been named "to pass upon the relative merits of competing chemical processes involved in the war effort."

DIVISION OF INDUSTRY OPERATIONS and Priorities Division have been streamlined under the new office of Director General for Operations. However, regulations issued by the two divisions remain in force until expiration or revocation.

ADDITIONAL BICYCLES totaling 100,000 Victory models will be produced between July 1 and August 31, 1942 under amended bicycle production regulations.

RERATING OF DELIVERIES on specified military planes and parts is provided by use of a new form, PD-4X-1. The new form was prepared in connection with Priorities Regulation No. 12 which provides for assignment of ratings AAA, AA-1, AA-2, etc., to existing contracts on specific authorization by WPB.

SMALL BUSINESS will get attention from the Smaller War Plants Corp. headed by Lou E. Holland as Deputy Chairman to Donald Nelson. WPB emphasizes that the new group is not a relief agency and that "the number of small business firms which we can help . . . will be smaller than the number we cannot help." Plans have been roughly outlined for confining heavy production to bigger plants and attempting to give smaller factories a bigger share of production responsibility on relatively simple war items.

War Agencies Review

RECENT REALIGNMENT OF WAR PRODUCTION BOARD has failed to bring a number of widely anticipated changes in various official relationships. However, it is probable that many changes earlier expected to be announced all at once will be made gradually with little fanfare. Still open to question and dispute is whether the Army-Navy Munitions Board will continue to have the final word on where critical materials should be used. Predictions that the Board would be stripped of its power have not, at this writing, materialized.

For instance, the Board, in a highly secret manner, still has control over whether cargo planes or combat planes shall have first call on materials. Current opinion is that the highest strategists still want combat planes before they want cargo planes. This situation is expected to hold until 1942 combat quotas are met, at which time schedules may be revised to push cargo planes on top.

It also lies in the hands of the Board, or the higher Army and Navy planners to whom the Board reports, to say whether the present critical situation on replacement parts for CPT and CAP planes will be met with a higher priority rating for commercial aircraft and parts.

PRICE CONTROL FOR THE AIRCRAFT INDUSTRY appears to have moved out of the hands of OPA men who drafted the proposed aircraft price regulation to become a possible factor in topside shuffling on a national anti-inflation policy. Although fears have not materialized that Leon Henderson might suddenly put out the aircraft price order, and similar regulations for other war industries, in order to throw industry pressure against Congress and the White House for a sounder price control policy, this remains a possibility.

Meanwhile, industry is urging the Army and Navy to act toward preventing OPA from assuming control of prices on war contracts. The claim is that OPA's plans would create a tremendous muddle in negotiating, re-negotiating, and auditing war contracts. Many feel that Henderson isn't anxious to get tangled up in anything so far from the consumer field, but is afraid action is necessary both to force realization of the need for much broader control of all price factors, and to hold in check inflationary factors inherent in the tremendous purchasing power of Army and Navy.

CONTRACT RENEGOTIATION AND PRICE ADJUSTMENT will soon be underway on a big scale with completion of preliminary work by Army and Navy Price Adjustment Boards. Although repayments by such manufacturers as Consolidated, Sperry and Bendix have thus far been handled by the big boards in Washington, it is planned to review most future cases through smaller boards set up at district procurement offices, with the Boards in Washington simply parcelling out the work and reviewing decisions.

Air Forces contracts for the most part are to be renegotiated through a special board located at Wright Field and headed by a civilian with a background in business and finance. If a company has contracts with several branches of the Army, or with both Army and Navy, price adjustments will be arranged through the branch which has granted the biggest percentage of the company's contracts. Liaison has been arranged to avoid duplication between the Army and the Navy Boards, and WPB's representative will meet with both Boards.

Outlook is for a common sense official attitude on price adjustments, with an effort to minimize headaches for war contractors. Questionnaires and other requests for information will ask only for financial and cost data generally kept on hand and not requiring detailed research. Voluntary cooperation is anticipated, but the Boards expect to be able to swing a heavy club if necessary.

The attitude of the Boards will probably be to leave investigation of past profits, in 1941 and earlier, to some other agency such as the War Frauds unit of the Department of Justice. In most instances price adjustments will be made on the basis of a company's overall profits situation at the end of a fiscal year, rather than on individual contracts.

LISTS OF ESSENTIAL INDUSTRIES released by Selective Service System, with the aircraft industry heading the list, does not mean solution of the problem of proper deferment for aircraft workers. Still needed are instructions to local boards on which jobs are essential in aircraft production. Such instructions were prepared weeks ago by Selective Service in cooperation with industry personnel committees, but have been held up by the War Manpower Commission and U. S. Employment Service who had a different and much more complicated scheme. With the industry willing to sacrifice some advantages of the original plan in order to get the thing into effect without further delay, a compromise is probable at an early date.

Airlines are briefly mentioned in the essential industries list under a "Transportation Services" heading. Selective Service officials say that while a list of specific airline jobs has been proposed, they will be so swamped with work on lists for several hundred other industries that they cannot guarantee early release of an airline job classification.

OPA Briefs

WAR CONTRACT PRICES, and prices charged for industrial machinery, may be above OPA ceilings provided application has been made for permission to charge higher prices. If application has been made under Procedural Regulation No. 6, contractors and sub-contractors may charge prices stated in the application until permission has been granted or denied.

BICYCLES to be rationed during July and August have been sharply reduced, bringing the July quota to 45,000. The original August quota has been withdrawn and will be announced in revised form shortly.

AUTOMOBILES of more expensive classes or less seating capacity now held in the Government Reserve Pool may be exchanged for others of lower price or greater passenger capacity, according to provisions of Amendment No. 9 to New Passenger Automobile Rationing Regulations.

AIRCRAFT FIR price rulings have been amended to permit (1) completion of existing contracts at contract prices, for delivery of aircraft fir to military services or Lend-Lease purchases without being subject to Maximum Price Regulation No. 26, and (2) for a period ending Sept. 10, 1942, sellers of aircraft fir may contract to sell at higher than maximum prices pending action by OPA on their applications for higher charges.

TIRES available to war plant workers who have certificates entitling them to buy Grade II tires, will be only third, fourth and fifth line new tires.

SUBPOENAS FOR PRICE AND RATIONING violation investigations may be issued by regional OPA administrators under recently granted power. The act permits OPA to require companies being investigated to produce records, books and other evidence.

RENT CONTROL on homes, apartments, rooming houses and hotels is being enforced now in most of the bigger war production areas, with smaller localities being placed under control as fast as they can be investigated.

MACHINE TOOL makers have been authorized by OPA to charge above established maximum prices until formal action has been taken to grant or refuse their petitions for permission to charge higher prices.

Second Printing

Meeting the unusually heavy demand for the current issue of **AMERICAN AVIATION DIRECTORY**, the only complete compilation of aviation companies and organizations and their personnel, the publishers announce a second printing with copies available after Aug. 3. Price is \$5.00 a copy, \$7.50 for two successive issues. The **DIRECTORY** is published twice a year. Orders should be placed with **AMERICAN AVIATION DIRECTORY**, American Building, 1317 F Street NW., Washington, D. C.

DOUBLE HONORS *for Aviation*



Presentation of Awards: Paul E. Richter, Executive Vice-President of TWA, Inc., shown at left, presents the winning trophy in the magazine division to Eric Bramley, managing editor of AMERICAN AVIATION. Holding personal plaque for AMERICAN AVIATION DAILY, winner of special award, is Robert H. Wood, Executive Editor. On right is Wayne W. Parrish, Editor and Publisher. Photo taken on the Sky Terrace of the Hotel St. Moritz, New York City, July 9, 1944.

Judges for the 1941 TWA news contest were Dr. Clark B. Millikan, professor of aeronautics, California Institute of Technology; Arthur Robb, editor of "Editor and Publisher," the newspaper trade paper; G.H. Ross Wilson, president of the National Aeronautic Association, now director of aviation for New Jersey; Jack Frye, president of TWA, Inc.; and Justin E. Rosecrance, aviation editor of "The Kansas City Star," a former TWA news contest winner, and a member of the Aviation Writers' Association.



News reporting!

1937

Special Award of Merit to Wayne W. Parrish, Editor, AMERICAN AVIATION. (There was no separate magazine division in the 1937 contest.)

1938

SECOND PLACE in magazine division to Wayne W. Parrish, Editor, AMERICAN AVIATION.

1939

FIRST PLACE in magazine division to Wayne W. Parrish, Editor, AMERICAN AVIATION.

1940

THIRD PLACE in magazine division to Eric Bramley, Transport Editor, AMERICAN AVIATION.

And now

1941

FIRST PLACE in magazine division to Eric Bramley, Managing Editor, AMERICAN AVIATION.

and

SPECIAL AWARD for distinguished reporting to Wayne W. Parrish, Editor, and Robert H. Wood, Executive Editor, of AMERICAN AVIATION DAILY.

FOR "consistently developing during 1941 the most interesting and best informed aviation writing concerning air transportation," AMERICAN AVIATION and AMERICAN AVIATION DAILY were jointly honored in July by winning respectively first place in the magazine division and a special award for distinguished reporting in the annual aviation news contest conducted throughout the nation by Transcontinental & Western Air, Inc.

THIS was the *fifth time in the five years of the TWA contest* that a staff member of AMERICAN AVIATION placed in the winning group.

FIRST place winner in the magazine division was Eric Bramley, managing editor of AMERICAN AVIATION and third place winner in 1940.

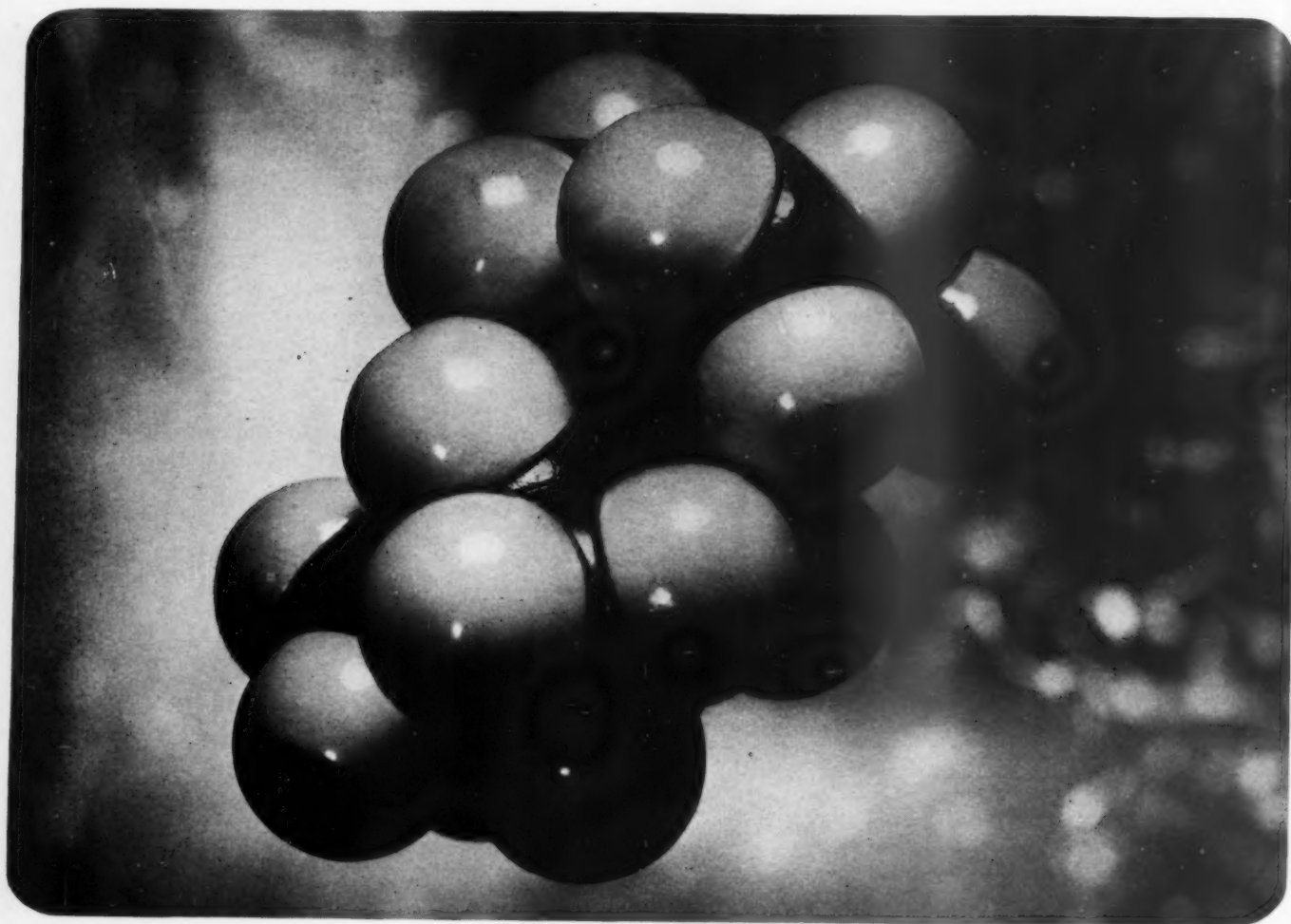
WINNERS of the special award to AMERICAN AVIATION DAILY were Wayne W. Parrish, Editor, and Robert H. Wood, Executive Editor.

PRESENTATION of the awards took place on the Sky Terrace of the St. Moritz Hotel, New York City, July 9, 1942, in the presence of a large number of aviation journalists, newspaper executives, and TWA officials. Master of ceremonies was Paul E. Richter, Executive Vice-President of TWA.

THUS the *largest full-time staff of aviation writers* has again been signally honored for its pace-setting job of serving the aviation industry, both daily and twice-monthly, with accurate, comprehensive and intelligent aviation news coverage. Five winners in five years! Such distinction has been accorded to no other publication.

TO TWA for sponsoring the contest and to the eminent judges who made the decisions—thanks! We are grateful for this consistent recognition.

AMERICAN AVIATION ASSOCIATES, Inc.
AMERICAN BUILDING WASHINGTON, D. C.



Power Booster

IT LIFTS heavier planes off the ground—carries more tons of bombs—takes them higher, flies them farther—faster.

The little wooden "toy" above is a chemist's model of this power booster—100,000,000 times life size. It represents a molecule of *2,2,4 trimethyl-pentane* (generally known as iso-octane), a prime ingredient in modern aviation fuel.

Like many other chemical discoveries now blended to make super-gasoline, iso-octane was expensive at first. It cost forty dollars a gallon. Through research and the peacetime development of better manufacturing processes, the petroleum industry is producing enormous quantities today at approximately twenty cents a gallon.

This development of iso-octane is another chemical miracle performed by the petroleum industry in its search for more efficient fuels.

Each year the complex art of making high-octane motor fuels is further advanced—and the possibilities are unlimited.

Ethyl technologists are assisting in this search. And, since the development of fuels and the improvement of engines are but parts of the same problem—the production of more *power* from each ounce of engine weight and gallon of fuel—it is our privilege also to cooperate in the research programs of the aviation industry and those of the air services of the Army and Navy.

ETHYL CORPORATION

Chrysler Building, New York City

Manufacturers of Ethyl Fluid, used by oil refiners to improve the antiknock quality of aviation gasoline.



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Congress Votes \$41,622,625 for CAA Activities

CONGRESS has completed action on the First Supplemental which appropriates \$41,622,625 for the CAA—\$36,677,450 of which is for CPT; \$5,000,000 for the flight strip program; \$250,000 for the Office of the Coordinator of Inter-American Affairs for the transportation of flight trainees; and \$500,000 for the Board of Investigation and Research-Transportation.

Following is a breakdown of CAA's \$41,622,625 appropriation:

- (1) Establishment of air-navigation facilities \$1,218,375
For purchase and installation of automatic selecting equipment at principal teletype stations, \$117,875
Establishment of radio range facility at Swan Island in the Caribbean Sea, \$75,000
Purchase and installation of equipment for the establishment of airport traffic control services at 50 locations \$946,000
Construction of control station operating quarters at Everett, Wash., and San Francisco, intercontinental radio communication stations \$79,500
- (2) Maintenance and operation of air-navigation facilities \$3,647,900
- (3) Washington National Airport \$28,500
- (4) Technical development .. \$50,400
- (5) Civilian pilot training \$36,677,450

The \$5,000,000 appropriation for flight strips will deplete the \$10,000,000 authorization for the program being completed by the Public Roads Administration in cooperation with the Army Air Forces.

CIAA Gets \$250,000

The Office of Coordinator of Inter-American Affairs will receive a \$250,000 appropriation for development work in connection with civil, and War and Navy aviation training programs in the American Republics. The civil aviation program (\$100,000) involves an educational program in air youth, model plane building, and elementary aeronautics. In cooperation with the CAA, information concerning our civil pilot training program will be made available to the other American republics and assistance given them in the creation of similar programs and civilian air patrols. The CIAA is also receiving funds for transporting trainees for the Army Air Forces (\$100,000) and Navy dept. (\$50,000) flight training programs.

The Board of Investigation and Research, established by the Transportation Act of 1940, which is to report to the Congress on the transportation situation in the U. S., including airlines, is to receive \$500,000 for a continuation of its studies.

Also included in the bill is an appropriation of \$150,000,000 for the capital stock of the Smaller War Plants Corp.

Vinson Report

(Continued from page 6)

from Iceland to South America and from Alaska to the Indian Ocean, maintain a ceaseless vigilance in their patrols, protection to convoys and a check on hostile submarine warfare. Further expansion in this category will be carried forward by the Navy during the forthcoming year, the report adds.

The rapid dispatch of men and materials between the far-flung bases as well as points within the U. S. made possible by the newly organized Naval Air Transport Service, it is reported, "has contributed much to the success of the Bureau in maintaining naval aviation equipment under war conditions."

Stating that "the combat types of naval aircraft developed by the Bureau and currently in service are unexcelled in performance, striking power, and equipment," the report points out that many more improved models "will see action within the next few months."

"The torpedo bomber, of which the latest model saw action at Midway only four months after the first plane left the manufacturer's plant, has been developed rapidly under the Bureau's direction so that today it represents perhaps the most lethal weapon yet devised for action against the surface vessel," it claims.

An extensive glider program was pressed forward during the year, prototype designs were completed, and production of specialized glider types undertaken, it is reported.

The Navy's lighter-than-air craft authorized strength was increased from 48 to 200, after successful demonstrations in anti-submarine patrol, and the first three of a series of new airship bases in the coastal areas were commissioned.

Reporting that delivery schedules during the past year "were generally maintained and in most cases advanced," it is pointed out that the Navy is rapidly building up to a procurement program of "almost 2,000 planes per month," and has undertaken "its full share of the President's program calling for 60,000 planes in 1942 and 125,000 in 1943."

The 4,895 aircraft procured by the Bureau in 1942 and the \$4,463,289,600 expended or obligated for aircraft, engines, and equipment indicate a greatly augmented Naval aviation program, when compared with figures given for previous years. In 1938, the Navy acquired 729 aircraft; in 1939, 270; in 1940, 328 aircraft; in 1941, 2067. In 1940, the Navy expended \$74,418,896 for aircraft, engines and equipment; in 1941, \$781,250,562.

Plant expansions sponsored by the Bureau during the year, representing commitments of over \$409,000,000, in many cases have not yet been reflected in the records of material delivered, the report points out.

The accelerated flight-training program of the Bureau during the

fiscal year raised the monthly entrance rate of students from 800 to 2500, it is reported.

In addition, at operational training units established, where advanced flight students acquire tactical experience—which in peacetime is accomplished by sea duty with the fleet—Naval flyers are thoroughly prepared for immediate combat action in the latest models of naval aircraft.

By increasing the capacity of service and technical schools, supervised by the Bureau, during the past year there is assurance to the service of the required numbers of ground personnel to maintain equipment in operating condition, the report claims.

Of the 23 new shore establishments commissioned by the Navy during 1942 fiscal year, 21 were naval air stations—18 for heavier-than-air and three for lighter-than-air—and two were Naval Reserve aviation bases for primary flight training, the report states, adding that in establishment of all training and operational projects there was close coordination with the Army Air Forces.

House Group Okays Recruiting of 30,000 Aviation Cadets

The House Naval Affairs Committee has unanimously approved legislation to permit the recruiting of 30,000 Marine and Naval aviation cadets each year by voluntary enlistment.

Heretofore, the Secretary of the Navy has had to approve all cadet appointments. It is understood that the bill, designed to decentralize administration of the Navy's flight training program, will make it possible for qualified men between the ages of 19 and 26 to enlist in the Naval or Marine Corps reserve at the new rank of aviation cadet. The measure would also make qualified enlisted men in other branches of the Navy or Marine Corps eligible for cadet pilot training.

Mechanic Bill Signed

Now that the President has signed the Randolph-McCarran bill, the CAA is authorized to train aviation mechanics and technicians as well as pilots.

The Senate amendment limiting the training to "enlisted reserves of the armed forces on inactive status" was rejected by conferees. The purpose of the legislation, according to the conference report, is "to establish a reservoir of trained civilians for duty in aircraft factories capable of performing technical and mechanical duties incident to the making and efficient manning of civilian, as well as military and naval aircraft."

Navy Announces Revised Schedule On Pilot Training

Thirty thousand pilots a year is the goal set in revised instructions issued by the Navy Dept., stepping up flight training of reserve officers and enlisted men.

Provision has been made, the Navy bulletin says, to permit officers to obtain flight training without resigning their commissions. Under revised instructions reserve enlisted men may now take flight training leading to commissions. Heretofore enlisted flight training was available only to men in the regular Navy.

For heavier-than-air training, reserve officers who may take flight training without having to resign their commissions must have had one year of sea service in a ship or aircraft squadron of the fleet as an officer in a line classification. They must also be under 27 years of age and must receive a recommendation for flight training from their commanding officer.

To qualify for lighter-than-air training, reserve officers must be lieutenants, junior grade, and under 31 years of age.

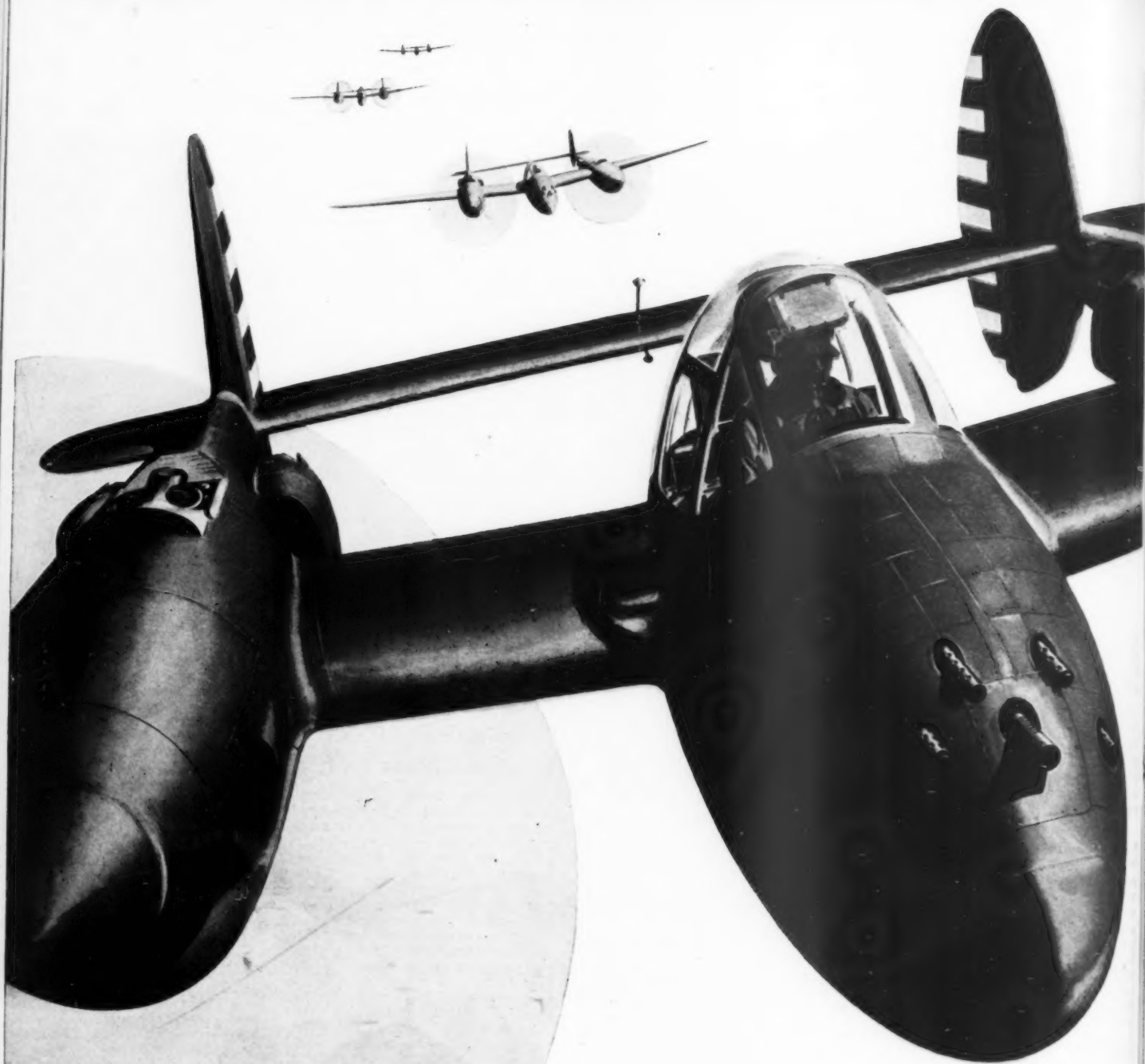
Reserve officers of the line who do not meet the requirements for training as officer pilots and who desire to train as aviation cadets may do so provided they have completed eight or more months of active duty. They must, however, vacate their commissions.

Refresher flight training courses are available to reserve officers who formerly were naval aviators or aviation pilots or who have had civil pilot training. Those who have been civilian pilots must not be less than 18 years old nor more than 39 and they must also have held a commercial pilots license or be private pilots with at least 300 hours flying time in aircraft of 100 hp or more.

Regular Navy officers may qualify for flight training if they are less than 31 years old and have had not less than two years' commissioned service and are qualified physically as officers of the deck. Men who are eligible for this training are not required to resign their commissions.

Enlisted men who meet the requirement may take flight training as aviation cadets and become commissioned officers or take aviation pilot training and become enlisted pilots providing they are recommended by their commanding officers within assigned quotas. The general requirements for aviation cadets are that candidates be U. S. citizens of ten years' standing, be between the ages of 18 and 27, unmarried and have a diploma from an accredited high school and eight months of service on active duty.

To be eligible for training as aviation pilots, enlisted men of the regular Navy and Naval Reserve must not be over 27, physically qualified and must not previously have failed in flight training dropped for any reason.



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They wanted a fight. They started it... 11 years ago in Manchuria... 8 years ago in Ethiopia... 3 years ago in Poland and 8 months ago at Pearl Harbor. American diplomats continued negotiations to the zero hour of the attack.

But now America has discarded the kid gloves of diplomacy for the grim strategy of arms, and American industry shares fully in acceptance of that challenge.

Your American aviation industry is prepared and expanded. Now, it builds the best airplanes in the world, of every type...and more of them than any

other nation. Lockheed will *continue* to strain every sinew.. to produce more and more Hudson bombers and Lightning P-38 interceptor pursuits. Lockheed Aircraft Corporation, Burbank, Calif.

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Air Shipping Board Proposed

Air cargo plans received impetus in Congress July 27 when Senators Johnson (D., Colo.) and Lee (D., Okla.) introduced a joint resolution creating a Supply Board "to proceed immediately with the construction of such flying boats and land-based airplanes for carrying troops and cargo as in its opinion will be necessary to supplement the shipping facilities now available and in process of construction, and to provide an adequate transportation system to supply the needs of the armed forces . . . that are stationed in Alaska and Hawaii, in outlying possessions . . . over which the United States has jurisdiction and control, and in foreign countries."

Members of the Board would be the Secretary of War, Secretary of the Navy, Administrator of the War Shipping Administration and the Chairman of the War Production Board.

Sen. Lee, introducing the legislation, told the Senate that it is "utter folly" to try to build ships faster than the Axis can sink them. However, he said he did not propose that the U. S. stop all shipbuilding, but endorsed the proposal of Henry J. Kaiser that part of the shipbuilding capacity be diverted to construction of flying boats.

U. S. Studies Kaiser Plan To Turn Out Cargo Fleet

(Continued from page 4)

aid in building up the important air cargo service. Many things must be determined before the program can be launched.

"We are extremely pleased with the performance of the Mars; the type is ready immediately to be placed in production, either as war vessels or as cargo ships, and we are awaiting the government's decisions.

"However, the Glenn L. Martin Co. already has a design for a much larger air vessel—a 250,000 lb. transport—and ships of even larger size are possible now. Such vessels as the Mars, and the larger types, can easily assume the chief burden of ocean transport because of their high speed and greater frequency of movement. Since we are losing surface ships much faster than we can build them, because of enemy submarine activities, the air cargo program is of extreme importance at this time."

The suggestion to build flying boats in shipyards, Kaiser said, was made after extensive study of the situation, and discussion with a number of leading aircraft manufacturers. He would not disclose whether a working agreement had been reached with anyone in the air-frame industry.

"I have worked on this problem, and I have had our engineers working. Our studies indicate . . . that the answer lies in the aerial freighter. And our studies further indicate that if we, as shipbuilders, are to take part in the production of aerial freighters, it should be in the field of the flying ship. We know the water best and our equipment is beside the water."

Going on to discuss the fact that plans have been drawn for flying boats of 200 and even 500 tons, Kaiser said. "But they are in the future. We cannot wait now for the

engineering work necessary. We must get into production at once."

Stating that he was not offering simply a Kaiser company proposal, he formally proposed to the Maritime Commission that a total of nine shipyards be turned over by the Commission to building of flying cargo boats. "Our studies indicate," he said, "that when nine yards were in full production, which should be within 10 months or perhaps sooner, they would be turning out these giants of the air (the Mars) at the rate of 5,000 a year."

In estimating the amount of time needed, Kaiser said, ". . . with the aid of that great builder Glenn L. Martin, with the aid of the aviation industry in general, and with the equipment already in place in the shipyards, we can have the assembly line functioning in six months or less. We can be at maximum production in 10 months or less. After the assembly line starts, the first three months should give us 10 ships a month from each plant. The second three months should give us 20 a month, the third three months should give us 30, and the fourth three months should give us 40. When that maximum production comes . . . we should be able to put down a vast Army anywhere in the world within a single week. We will be free once and for all of the fear of having our armies cut off in some place distant from our own shores."

" . . . I do not exaggerate by a single ton or by a single hour the amount of materials and the amount of time that could be saved by conversion of these great ship plants. We have the plate shops, machine shops, sheet metal shops, pipe shops, warehouses, mold lofts. The building necessary could be made of non-critical materials. We wouldn't need steel."

Brokers Hit

Legislation approved by the House will outlaw the contingent fee practice on government contracts and will make it illegal for persons who have been employed by the Federal government during the preceding 5 years to represent businessmen in dealings with the government.

House approval of the measure followed closely spectacular hearings before the House Naval Affairs Committee which revealed that some Washington brokers had earned \$1,150 per day.

Aerographer

Legislation now on the House calendar will establish the commissioned warrant grade of chief aerographer and the warrant grade of aerographer in the Navy. The bill has already been approved by the Senate, and is department-sponsored.

Joins Service

Asa Rountree, Jr., Director of Aeronautics for Alabama, has been called into service, reporting to Fourth Corps Area headquarters, Atlanta, Ga. Rountree, a veteran flyer of World War I days and prominent figure in Alabama aviation circles, holds a reserve commission.



American Product: This Curtiss Tomahawk fighter plane in service with the RAF demonstrates the rugged construction which goes into U. S. warplanes, built according to U. S. Army Air Forces' specifications. With his rudder and elevator almost shot away, the pilot was able to return to his base and land without difficulty.

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EDITORIALS



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Fortnightly Review

(Continued from page 1)

the very moment when some thorough inventories of our war program are needed, Congress is putting the fall elections far to the front of the war and hence the clamor for action on over-seas transport may not get the hearing it should—and someday must—have.

Certainly there is one very bright spot in the world-wide picture and that bright spot can be traced to the desk of Brig. Gen. Harold L. George, Commanding General of the new Air Transport Command. His announcement that the domestic airlines would soon be flying all over the world under contract for the Army is one of the finest and most constructive forward steps so far. Gen. George and his group are utilizing the valuable trained resources of the airlines to the fullest degree.

The airlines are happy. Gone are the jitters of government ownership or suspension of yesterday. The task ahead is stupendous. But the flight path is forward and Gen. George has exercised keen wisdom in the manner in which he has made and handled the plans. The significance of this new transport operation cannot be over-estimated.

AMEX is Started

AMERICAN Export Airlines is now in full operation across the Atlantic with its small but excellent fleet of Vought-Sikorsky flying boats. As one of those who favored the establishment of this additional trans-Atlantic operation, we congratulate the company on the launching of this new service. Although American Export is not a mail carrier because of the Senate blockade of last year, it would seem obvious that mail authorization is bound to come. Quite apart from the mail, however, the

line is a vital war adjunct. American Export is welcomed into the group of airlines playing such an important role in the war, and a group which will be even more important in international trade after the war is over. The long and bitter fight which the new company had to wage to get its start was more than justified by the real need for more service today.

What About Production?

MR. HENRY J. KAISER, the shipbuilder whose reputation for doing the "impossible" has cowed more than one group of Washington officials, has catapulted the cargo airplane onto the front pages by his statements that he wants to stop building ships to be sunk by submarines and build big flying boats to operate in the air ocean away from surface menaces. If it takes a shipbuilder to put over a point that aviation men have been trying to put over for lo these many years, it is satisfactory with us. "A prophet is not without honour, save in his own country."

We are not prepared to pass on Mr. Kaiser's qualifications to build big flying boats, but in any case this is not the crux of the problem. To build flying boats Mr. Kaiser must have material and to get material he must have authorization and contracts, and on top of this he must have a top preference for materials. The road is long and tortuous, as the aviation industry has long ago discovered.

Most people forget that the War Production Board is only the producing end of the war effort and cannot, of itself, decide what needs to be built. The WPB is getting a great deal of blame which it doesn't deserve, for WPB's job starts only after it is told what has to be built. The whole problem goes straight to the Army and Navy Munitions Board, which is the sole agency which can decide what we need now and in what order.

No one can build airplanes until the ANMB gives the word, and as to whether tanks shall precede planes, or four-engined bombers precede cargo planes, the decision still rests with ANMB.

Despite all of the hullabaloo over aircraft priorities earlier this year, the bald fact remains that only four-engined bombers and most Navy airplanes, have primary preference in the entire 1942 war objective. Air cargo airplanes are secondary despite talk to the contrary in uninformed quarters. So are many other types of airplanes. This status can only be changed by revising the entire 1942 objective, or waiting until the 1942 objective is completed.

It may be noteworthy again to repeat in these columns that aviation is not represented on the ANMB except in second-rate fashion. There is not a single airman with rank of General on the Board. Could it possibly be, by any stretch of the imagination, that this singular fact that no top-side airman is on the inner council of the Board is the answer for the tragic laxity in the building of quantities of cargo airplanes?

Increasing numbers of cargo and transport airplanes are coming off the lines. The numbers called for in contracts already signed look impressive. We are getting some cargo planes. But there is a difference between a major and a minor program and there is a difference in priorities for material. And despite the impressive contracts and the current production, the important point is that there is no all-out program, and no top allocations of material.

Some day many government files will find their way to investigating committees and there will be many decisions of 1941 and 1942 which will be painfully difficult to explain on the part of top-side officials—both military and civil. Large-scale production of cargo airplanes is vitally important. Not to build them is criminal negligence. They are critically needed in all parts of the world. They can't carry all of our trans-ocean equipment, to be sure, but they can rush the important stuff to critical war theatres. The Air Transport Command is now set up to expand indefinitely. The cargo airplane should share top priority from now on. If Mr. Kaiser can help force this issue, he deserves the gratitude of all who know the critical transportation problem of this war.

Letters

New York, N. Y.

I have read the article by Mr. E. J. Foley in the July 1 issue of *AMERICAN AVIATION* on the subject "War May produce 'Convertible' Airliners" with considerable interest.

While I heartily agree with the interchangeability feature of air transport equipment of the same model and type, I am not quite in accord with the convertible feature suggested.

It is true that it may be possible to carry express and passengers in considerable volume on the same airplane, and perhaps satisfactorily work out a convertible feature which will allow a quick variation between passenger and cargo capacity. Still, we must fundamentally diversify between air express and air freight. We may consider for the sake of argument that air express consists of articles such as jewelry, sample dress goods, motion picture films, medical supplies, etc., whereas air freight might include a load of flowers, baby chicks, fish, machinery, etc. These two classifications involve two distinct handling and operating problems. The former may be considered similar to air express now flown; that is being transported from airport to airport, with truck delivery from airport to store or door, whereas air freight may require flying box cars and gliders using flight strips adjacent to factories, horticultural fields and wharves.

Furthermore, air express can and will probably fly in passenger airplanes: that is, on schedule. Air freight, on the other hand, may have to follow the handling procedure of present ground type operations, which is not on a true schedule basis, because the time of departure depends on the readiness of the goods to be flown, and their destination may be an off-line point, or a point on some other system.

It certainly would not be advisable to transport fish and flowers on an airplane which would a short time thereafter be used for passenger service, assuming that conversion could be made in a matter of a few hours. Furthermore, an operator may find himself with all conversion equipment at one end of the line, or as it has been suggested, carry this equipment along, so conversion can be made at any point on the system.

To carry this equipment, which entails the loss of pay load, it is to my mind unthinkable at present, or even in the near future, when we are trying to reduce our operating costs per ton miles per hour.

It is true that perhaps a higher operating load factor could be obtained with a convertible airliner. Against this, however, stands the cost of conversion each time this needs to be done and the higher the initial cost of such equipment, which would be reflected in its depreciation rate.

Interchangeability in basic assemblies between airplanes of the same model and type is, of course, im-

perative, if large scale transport operation is to be really successful. Furthermore, the labor required to permit parts interchangeability must be considerably reduced from what it is now. This applies primarily to powerplant assemblies and landing gear units which are serviced at regular intervals.

In other words, let us stop designing airplanes and concentrate on transportation vehicles.

CHARLES FROESCH,
Chief Engineer,
Eastern Air Lines.

New York
July 20, 1942

Having been a regular reader of *AMERICAN AVIATION* since you established it some five years ago, I have become accustomed to regarding the information contained therein as reliable and accurate and that your opinions, the editorial matter, and staff articles are well founded.

It somewhat disturbed this regard for your accuracy when I read in the release dated June 11 of the talk given before the Atlanta Chamber of Commerce by Wayne W. Parrish, editor, that you quote and give weight to an estimate by Mr. Grover Loening, that it would require only 145 airplanes of 15-ton carrying capacity and 250 mph. speed to fly every pound of Railway Express carried by the railroads in 1941.

This is a far-fetched twisting of some figures that I gave Mr. Loening on the estimated ton-miles of rail express moved in 1940. It is no more true than to say that only 145 express cars would be required to carry every pound of Railway Express traffic, although the number of express cars could be arrived at by the same method of calculation as used by Mr. Loening.

The traffic of Railway Express Agency cannot be handled in 145 such airplanes nor can it be handled in 145 express cars for the reason the traffic cannot be assembled for such loading and carriage because of the needs of the shippers and consignees to have the traffic transported and delivered as addressed.

Mr. Loening's estimate of the 145 planes required to fly all of the Railway Express traffic is about as accurate an engineering estimate as would be an estimate that only two bathtubs are required for a 25-family apartment house based on each of the five persons per family having the use of a tub for 15 minutes daily between 6 A.M. and 10 P.M.

If the express traffic could be made to ride in but 145 cars per day instead of the many thousands of cars actually required to handle the traffic when and where it is offered and carry it to where it is addressed, the express rates could be only a small fraction of the present rates.

This letter is written by one who has been actively and enthusiastically engaged for many years



in aeronautical activities including cargo flying, and who, too, sees a tremendous commercial future in the air, for knowing the facts, I believe you would not inadvertently misinform your public.

C. G. Peterson
Chief Engineer
Railway Express Agency

(Editor's Note: No inadvertent misinformation by quoting Grover Loening's figures was intended. Primary purpose was to demonstrate how few airplanes are needed to carry large volumes of express and cargo. If the illustration implied that only 145 airplanes could do the identical job of distribution now afforded by widespread Railway Express Agency, Chief Engineer Peterson has won a point of clarification. Even so, it would take a relatively small fleet of airplanes, with a 4 to 1 speed ratio over railroads, to do the entire job. Chief Engineer Peterson's bathtub illustration of the pitfall of inelastic idealistic statistical estimates is excellent. Let no one underestimate the huge carrying power of new cargo planes coming off the lines, as witness cargo movements today by Air Transport Command of the Army Air Forces, the figures on which will astonish many conservative folk when these figures can be published.)

New York, N. Y.

In your issue of May 15, 1942, you have an article about Luscombe Airplane Corporation in which you state that the Alien Property Custodian took the company over because stock was German owned.

May I call your attention to the fact that this is not correct, and that the vesting order describes the stock as owned by "a national of a foreign country." It is actually the property of a citizen of the Principality of Liechtenstein, which is an independent country under Swiss diplomatic protection.

Robert Perret
Counsellor at Law

New York, N.Y.
July 22, 1942.

With reference to your editorial in the July 15 issue, "Pan American opened up the air route across Africa", what about the route opened by Imperial Airways in 1936 which was taken over by this Corporation and is still functioning as busily as ever?

P. E. Bewshea
Manager, N.Y.

British Overseas Airways Corp.
(Editor's note—BOA's popular U. S. representative Paul Bewshea wins a point. All apologies to the British pre-PAA African operations.)

Obituary

STEENSTRUP

Peter S. Steenstrup, 68, former vice-president and general manager of the General Motors Export Corp., and one of the automotive pioneers, died at his home in San Mateo, Calif., July 16.

LOW

Archie E. Low, 55, former president of the Canadian Colonial Airways, Ltd., died July 4 at his residence in Ottawa, Ont. At the time of his death he was still a director of Colonial Airways.

MAGUIRE

Richard Cromwell Maguire, 38, American Airlines captain, died at Memphis, Tenn., July 16 following an operation for appendicitis. Capt. Maguire made the first "blind" flight from New York to Chicago in 1935. He held the rank of Major in the Army Air Corps Reserve and was one of the organizers of the Air Line Pilots' Association. Burial was in Elkton, Md.

SCHIEL

Julius Schiel, 23, manager of the airport at College Park, Md., died from injuries suffered when his monoplane struck an electric wire and crashed in flames. He was a Naval Reserve cadet, and was enrolled in the CPTP.

Success of New Wage Conferences Hinges on Developments in Capital

Original Aviation Issues Relegated To Sidelines

By CONRAD CAMPBELL

THE wage stabilization conference for the industry will reconvene about August 10, according to Paul Porter, WPB presiding officer. Whether it has any chance of being more successful than the recent shadow-boxing contest on the West Coast, or even whether it will be held at all on the scheduled date, depends almost entirely upon what happens in the meantime in Washington.

Even before the conferees appeared at Los Angeles for the first hastily recessed meeting, it was apparent to all qualified observers that the issues involved were far wider than the announced purpose of stabilizing wages throughout the aircraft industry on the Coast. In similar manner, the ensuing conference, if held, may again become the sparring ground for various factions seeking to establish a general war labor policy, with the original conferees—aircraft management and labor—relegated to the side lines.

Objectives Ignored

The primary objectives of the meeting on the Coast, a series of collective bargaining talks designed to adjust management and labor's viewpoints on wages, with a government umpire sitting in, were never actually reached. The conference became, instead, a proceeding before government experts possessing contradictory opinions, with the final verdict, if any, obviously a federal decision.

A high point in the behind-the-scenes struggle for authority developed when the National War Labor Board decision in the "little steel" cases was presented as a national pay rise formula. This was quite opposite to the policies announced by WPB spokesmen who stated that wages would be "stabilized" regionally within an industry, and labor leaders who had gone all out for wage increases pegged to the highest scales paid in any job classification in any part of the country.

OPA's Statement

However the meeting really blew up when Richard Gilbert of the Office of Price Administration told the meeting that OPA's interpretation of the President's message to Congress in April precluded general wage raises except those necessary

to eliminate inequalities and substandards of living. He explained:

"While substandards of living have not been defined officially with any degree of precision, it is the position of OPA that the term must include (1) the relation of wages in a particular industry to the national wage structure; and (2) the fact that, in view of war requirements, a sharp reduction in the standard of living is almost inevitable. Before the end of the war, the living standards of the American people will be reduced below the level prevailing at the bottom of the great depression. Under these circumstances, no group can improve or can avoid a reduction of its living standards except at the expense of others.

Wage Inequalities

"Wage inequalities have not been defined officially with any degree of precision. In this conference, it has been suggested that wage inequalities should be taken to mean any difference between one wage group and another. Such an interpretation would make it impossible to hold the cost of living and would be inconsistent with the national economic policy as defined by the President. Without attempting a permanent, precise, and all inclusive definition of inequalities, the OPA regards the following factors for purposes of this conference as pertinent in their interpretation of this term: (1) Differences in wages between comparable jobs in the same plants; (2) Differences in wages between comparable work in the same industry in the same region; (3) Differences in wages between comparable work in different industries in the same region; (4) Geographical differences in the cost of living; (5) Variations in the conditions of work, including housing and other community facilities, transportation, and other matters which affect the convenience and desirability of individual and fam-

ily life; (6) Health and safety conditions both in the plant and in the adjoining community."

Harper Fowler, deputy chairman of the War Manpower Commission, argued on the other hand that adjustment of inequalities meant not only changing the unequal relationship of wages within an industry but also between industries.

The argument between the various government agency men quickly spread to Washington. OPA is pressing the President for action that would limit wage adjustments to the correction of inequalities and substandard rates, based upon OPA evaluations of such factors. The potent Washington labor bloc in turn calls upon the Administration to live up to its agreement made in January, under which labor agreed not to strike during the war on condition that labor disputes be straightened out by the National War Labor Board.

Congress, inspired by letters from constituents, made a half-hearted attempt to revive labor control bills and then passed the buck to the President, this being the period just before election. In the meantime, the labor organizations are frantically opposing OPA's direction of wage policies.

Stage Is Set

Thus the stage is set for the new aircraft wage conference. Whether it will actually establish wage stabilization for the Coast manufacturing plants is exceedingly questionable. It is quite widely felt that sooner or later the final definitive word on wage increases will have to come from the White House, either directly or indirectly. Whether this will happen before the meeting date or not will determine the importance or utter uselessness of the conference. Otherwise, Washington observers look for another free-for-all, with the industry occupying the position of the usually injured bystander.

Little Steel Case Worries Manufacturers

The new wage formula announced by the National War Labor Board in awarding a 44c daily general increase to "Little Steel" workers, based on the rise in cost of living, presages new wage problems for aircraft executives.

There is no question but that the decision is thoroughly bad in principle, satisfying no one, and leading directly to confusion rather than adjustment of the wage controversy. Unfortunately for the industry, the formula immediately affects the automotive cases now before NWLB and these in turn will have a definite bearing upon aircraft workers' demands.

The danger is expressed by R. J. Wyss, president of the Republic Steel Company, one of the firms ordered to pay the increased rates. "The award of the wage increase to steel workers may well prove to be the starting gun in a race of disastrous inflation. Since steel is the country's basic industry, the wage increase awarded by you probably will run like wildfire throughout every other industry and every part of the country."

Events quickly bore him out as other steel company unions insisted upon cancelling former contracts and obtaining a similar increase. At the same time, union leaders stepped up their demands for \$1-a-day increases in the Ford, Chrysler and General Motors cases. Hearings in these disputes will afford the next big test of the NWLB formula and no one doubts but that it will eventuate in the grant of some part if not all of the demand.

Steel workers received high pay, but automotive employees get even more. According to the Department of Labor, average hourly earnings of automobile employees are approximately \$1.15. In a recent communication to NWLB, the Chrysler Corp. reported the average earnings of its workers at \$1.22 an hour and asked the Board to reject the added \$1-a-day demands. The company stated emphatically: "There can be no reasonable basis for increasing the wage level of people who are already the best-paid workers in the whole country." In all, automotive wages are up 60% to 70% over 1929.

Aircraft workers who have asked up to 50% as an increase based on present Detroit area levels will have another peg to shoot at, if the Board grants these increases. So, another spiral is merrily on its way. Although in the industry, present-day government contracts may mean that in the final analysis the Government will have to pay any increases now granted in aircraft, there's another day coming . . . when post war competition will present quite a different angle. And, whoever heard of wage levels, once set, coming down without a general upset?

C. C.



Champs Meet: A Lockheed P-38 and a British Spitfire meet at Lockheed Air Terminal, Burbank. The Spitfire is generally credited with having saved England during the Battle of Britain in 1940, while the P-38 made its combat debut in helping repulse Jap attacks in the Aleutians.

*The B.F. Goodrich
Airplane of the month*

GRUMMAN "WILDCAT"

"WILDCATS" OVER WAKE ISLAND made history for the Marine Corps . . . as they did west of the Gilberts for the Navy. This Grumman F4F pursuit ship, which can be either carrier- or land-based, has already won its service stripes in Democracy's battle. B. F. Goodrich supplies the "Wildcat" with Silvertown tires for safer, smoother landings whether on the pitch-

ing deck of an aircraft carrier or on a shell-torn military field. Grumman has long been making fine ships for our Navy and so this month B. F. Goodrich salutes Grumman, maker of the fast F4F pursuit known as the "Wildcat."

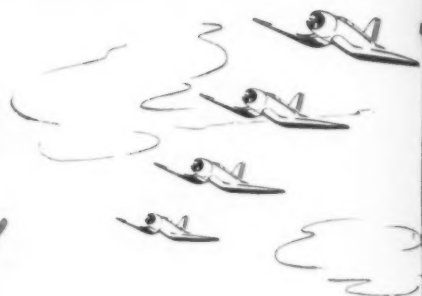
The Navy flies with

B.F. Goodrich

FIRST IN RUBBER

B.F. GOODRICH RUBBER RESEARCH FOR THE

Aviation industry



Synthetic Rubber that conducts electricity lengthens life of De-Icers!

NATURAL RUBBER is a poor conductor of electricity, and when such an insulator is moved rapidly through the atmosphere, static electricity is generated on its surface. Back in the years of early De-Icer development, thousands of volts accumulated on the De-Icer surface and could not be dissipated. In fact, the easiest way it could manage was to puncture a hole in the De-Icer surface and go to the metal wing beneath.

De-Icers operate by being inflated with air, causing them to pulsate and crack the ice so that it can be carried away in the airstream. The static-made holes naturally shortened De-Icer life.

So B. F. Goodrich engineers tackled the problem. They developed a synthetic rubber coating which would conduct electricity more readily. They sprayed a thin layer of this material on a polished metal surface and then built the De-Icer against this film.

When the finished De-Icer was removed, ready for installation, it was protected against static punctures.

Electrostatic charges no longer accumulate on De-Icers, giving them added service life. Radio reception, too, is improved, since the static is silently dissipated.

Other advantages were gained by the addition of this synthetic layer. Perhaps the most important is the added protection from sunlight and from oil thrown back from the motors. That fact adds even more service life to today's De-Icers. Another example of B. F. Goodrich research!

Designers and engineers are invited to write for the new De-Icer Handbook, a technical data book especially written for their help. For information on De-Icers and other products, ask for our general catalog. The B. F. Goodrich Co., Aeronautical Division, Akron, Ohio.

**MAKERS OF B. F. GOODRICH TIRES AND OVER 80 RUBBER
AND SYNTHETIC RUBBER PRODUCTS FOR AIRPLANES**

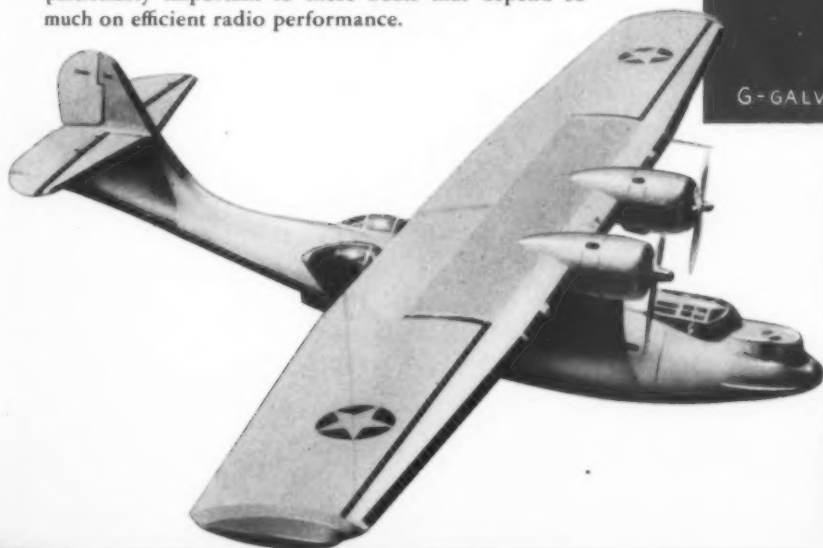


Information from B. F. Goodrich ON DE-ICER CONDUCTIVITY!

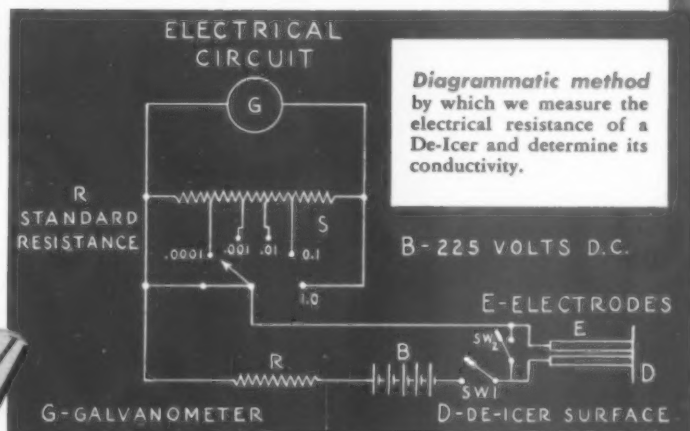
Gold Foil Test, as simple as any performed in a high school physics class, demonstrates whether each De-Icer allows an electrical charge to pass over it. When the charged electroscope touches the De-Icer, the gold foil moves only if the charge is conducted away over the surface of the De-Icer.



The Navy's PB2Y-2 is just one of the ships that sail the skyways for Uncle Sam, equipped with B. F. Goodrich De-Icers to give fullest protection in all kinds of weather. The static-conducting De-Icer surface is particularly important to these boats that depend so much on efficient radio performance.



Recently B. F. Goodrich has developed an improved conductive surface that has increased flexibility and conductivity. As a result, the De-Icers' pulsating tubes have still greater recovery and longer life.



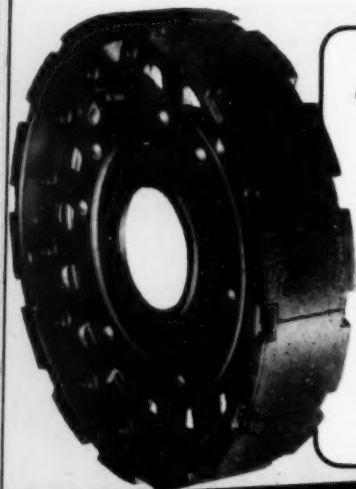
In war or peace
B.F. Goodrich
FIRST IN RUBBER

FROM THE B. F. GOODRICH NOTEBOOK



TINY TRAINERS AND 4-MOTOR BOMBERS

are doing their "ground work" on B. F. Goodrich Silvertown Tires. These tires have been developed to help pilots make safer, smoother take-offs and landings. Their rugged construction makes them especially well suited for today's military operations. Their dependability makes them the choice of America's leading commercial airlines. Airplane Silvertowns are available with both smooth and non-skid tread designs.



BETTER GROUND-CONTROL

is achieved by planes equipped with B. F. Goodrich Expander Tube Brakes. Application of the brake causes braking fluid to fill a synthetic rubber expander tube. This tube expands forcing the brake blocks into even contact with the entire circumference of the brake drum, bringing the plane to a smooth, safer stop.

B. F. Goodrich

AERONAUTICAL DIVISION

AKRON, OHIO



BEACHING GEAR

tires, tubes, and brake tubes are made by B. F. Goodrich for sea planes. This equipment makes it easier to draw a plane out of the water by making it unnecessary to use a dolly. Many important military planes are now being equipped with these B. F. Goodrich products.

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Germans Turn to Air-Cooled Radial Engines for Fighters

THE AVIATION industry has looked with keen interest upon the word from England that the Germans have gone to air-cooled radial engines for their high-powered aircraft. Word of a new German radial came from confidential reports to U. S. government officials and through the two British publications, *Flight* and *The Aeroplane*.

The German engine is a 14-cylinder 2-row air-cooled radial, the BMW-801, installed in the Focke-Wulf 190 fighter and evidently several other combat types, and develops about 1580 hp. at take-off and 1460 hp. at 16,000 feet. It is about the size of the Wright 2600 cubic inch, and somewhat below the Pratt & Whitney 2800 cubic inch engine.

According to industry and official sources, the engineering and aerodynamics of the BMW-801 are very fine. It has a low-drag cowl, and the installations were good. Another model, the BMW-802, is known to be in existence, and one industry official said the workmanship and design was such that the Germans should be able to go into higher horsepower classes.

Although the new German engine has been hailed as a new "victory" for the air-cooled engine in the long-term "feud" with liquid-cooled engines, one government official said he thought the development was interesting but not overly significant. He said there are both liquid-cooled and air-cooled schools of thinking in Germany and that the air-cooled group had evidently been making more progress than formerly.

In this country the air-cooled radial aircraft engine has been far ahead of the rest of the world, and production of engines of much higher horsepower than the German engine has been underway for some time. It has been pointed out, however, that no American fighter powered with our 2000 hp. engine has as yet seen action in Europe. Hence for the time being the German Focke-Wulf 190 may have an edge over British fighters powered with inline liquid-cooled engines of slightly less horsepower. In general the aircraft industry believes the German change-over is significant and will keep the U. S. hard at work to keep ahead of German air-cooled developments.

Lockheed Cuts Rubber

Further streamlining of the Lockheed Lightning P-38, famous twin-boomed U. S. Army interceptor, is underway to cut the amount of natural rubber now being used in her construction by more than one-third. Bound hair, felt and plastic are the main substitutes. Slight changes in design would make possible elimination of about 90% of the rubber and synthetic cork now necessary, an official said.

Vultee Purchases Intercontinent Aircraft Corp.

Vultee Aircraft, Inc. has announced the purchase of Intercontinent Aircraft Corporation, Miami, Florida, through the acquisition of all of the outstanding stock. All of the stock was owned by William D. Pawley, chairman of the board.

Intercontinent was founded by Mr. Pawley and Commander Bruce Leighton, president, both interested in aircraft exports. Both executives are retiring from the Miami company. The plant was built two years ago and was taken over by the government through the Defense Plant Corporation.

Don I. Carroll, vice president of Vultee, will have general supervision of the Miami plant. Other operating officials there will include William S. Laycroft, Robert E. Brown, and Lester H. Rabe. Intercontinent has been one of Vultee's important subcontractors, and is the fourth link in the system of Vultee plants. According to the announcement by G. M. Williams, vice chairman of the Vultee board, the company will expand operations and employment at the Miami plant.

R. W. Millar Quits Vultee - Consair; D. G. Fleet Named

Richard W. Millar, first head of Vultee Aircraft, Inc., after its reorganization several years ago, has resigned as president and director of the company. He has also resigned as director and executive committee member of Consolidated Aircraft Corp. His future plans are to be announced on completion of a vacation.

David G. Fleet, 32, for several months assistant general manager of Consolidated Aircraft Corp. at San Diego, was named executive vice-president of Vultee. Mr. Fleet is the son of Major R. H. Fleet, founder and former head of Consolidated who sold his interests in the company last December.

Indiana War Plant

The War Production Board recently revealed that a site in Indiana had been approved for a \$1,988,400 plant to be operated by the Perfect Circle Corp. for the manufacture of airplane piston rings. Final approval of the site, however, the announcement said, must come from Undersecretary of War Robert P. Patterson.

MANUFACTURING

On the Labor Front

ALUMINUM COMPANY OF AMERICA

Workers and management at the Massena plant sign a pledge of no-work-stoppage for the duration. Wage disputes at the Fairfield and Bridgeport, Conn., and Cleveland, O., plants are certified to NWLB. A referee is appointed by the Board to consider the demands of the Connecticut employees subject to a final decision by NWLB.

AMERICAN MAGNESIUM CORP., Buffalo, N. Y.

Strikers vote to return to work pending NWLB decision ending unauthorized work stoppage of 1000 workers said to have resulted from employees' dissatisfaction with NWLB's delay in settling the case. Placed on docket for July 29.

BENDIX PRODUCTS DIVISION of the BENDIX AVIATION CORP., South Bend, Ind., is directed by NWLB to adopt an overtime clause providing for time-and-a-half after 8 hours work in any one day, or after five days work in any one week, and double time on seventh consecutive day of week; retroactive to May 1, 1942.

BOHN ALUMINUM & BRASS CORP., Detroit, Mich.

United Protective Workers of America is certified as bargaining agent by NLRB.

CHEVROLET DIVISION, GMC.

Baltimore, Md., plant is directed by NLRB to conduct an election for bargaining representation among employees. Chevrolet Transmission Division, Saginaw, Mich., is directed to recognize United Organization of Plant Protection employees.

CHRYSLER MOTOR CO., Detroit, Mich.

Hearings before NWLB which began July 15 were recessed until later in month. Company asks NWLB to reject wage increase demands of UAW-CIO stating that "there can be no reasonable basis for increasing the wage level of people who are already the best paid workers in the whole country." Two plants in Georgia are ordered by NLRB to conduct elections among employees.

CORNELL DUBILIZER CONDENSER CORP., S. Plainfield, N. J.

Company is ordered by NLRB to hold an election among employees to determine if they wish to be represented by UE&RW-CIO or by International Brotherhood of Electrical Workers-AFL.

CURTISS-WRIGHT CORP.

Buffalo plants held election ordered by NLRB at which IAM-AFL with 9,699 votes won over UAW-CIO with 7,450. Labor dispute at Propeller Division, Beaver, Pa. is submitted to NWLB after work stoppage. Both parties have signed agreement to accept NWLB decision.

DETROIT TOOL & DIE MFG. CO., Detroit, Mich.

Demand of 5000 workers for union shop and wage increase of 15c an hour is certified to NWLB. Panel hearings will be submitted to Board.

DOUGLAS AIRCRAFT CO. INC., Santa Monica, Cal.

President Donald Douglas has issued an order stating that no discrimination on place of work, kind of work, or wages, will be allowed throughout the Douglas plants. The order forbids discrimination on racial, religious, political or trade union grounds.

DOUGLAS FIR INDUSTRY.

NWLB has adopted unanimously the recommendations of the special commission appointed by the National Defense Mediation Board. Decision settles the retroactive features of last year's dispute between 187 companies and the International Woodworkers of America-CIO, representing 10,000 employees. Commission found that no increase in wages, except the 12½c an hour recommended by Mediation in summer of 1941, was justified.

FAIRCHILD AIRCRAFT DIVISION, Hagerstown, Md.

Workers receive vacation pay checks in lieu of vacation. Those in service for six months to a year receive a half week's pay, those with longer service, a full week.

FORD MOTOR CO., Detroit, Mich.

A three-man NWLB panel hearing was to begin in Detroit, July 28 on wage increase demands, new contract, etc.

GENERAL MOTORS CO., Detroit, Mich.

NWLB hearing will begin August 8 on \$1-a-day wage increase. Employees representation petition filed by International Union of Operating Engineers is dismissed by NLRB.

MONSANTO CHEMICAL CO. and subsidiary, New England Alcohol Co., Everett, Mass., strikers threaten to tie up war production in 10 New England cities, but return to work after case is referred to NWLB.

NORTH AMERICAN AVIATION, INC., Inglewood, Cal.

Demands of 15,290 workers is certified to NWLB. Issues include union recognition, representation, seniority, grievance procedure, rights of management, notice of absence, wages, vacations, apprenticeship, union activity, military service and reinstatement of 1941 negotiating committee.

REPUBLIC AIRCRAFT PRODUCTS, Detroit, Mich.

Preliminary NWLB hearings were conducted in Detroit on July 23 and 24.

SIMMONDS AEROCOSSORIES, INC., N. Y. C.

Company is ordered by NLRB to conduct an election among two groups of employees.

SPERRY GYROSCOPE CO., INC., Brooklyn, N. Y.

NLRB order for termination of a closed shop agreement with the Brotherhood of Scientific Instrument Workers of America and to reinstate discharged employee is affirmed by Circuit Court of Appeals.

TIMKEN ROLLER BEARING CO.

Plants in three Ohio cities vote for USA-CIO for union representation.

UNITED STATES RUBBER CO.

NWLB has ordered company to sign a maintenance of membership contract with United Rubber Workers-CIO in eight plants, employing 21,500 workers.

WEATHERHEAD CO., Cleveland, O.

Negotiations by both parties are continuing on basis of NWLB recommendations.

WRIGHT AERONAUTICAL CORP., Paterson, N. J.

In an election petitioned by UAW-CIO, employees vote for their independent union, the Wright Aeronautical Employees Association. After winning, the union again placed its wage demands before NWLB.



FLEETWINGS... helps
turn fledglings
into flyers!



WITH his "dodo" days and primary training behind him, an Army aviation cadet enjoys a new experience in speed and maneuverability when he gets a chance to fly one of Uncle Sam's modern basic trainers.

The sturdy Fleetwings BT-12 . . . world's first military plane built principally of stainless steel . . . is a "honey" to handle, from take-off to landing. An expert military flyer recently called the Fleetwings BT-12

"The best plane of its class I've ever flown!"

Such high praise proves only that Fleetwings has done the unusual again. For Fleetwings engineers have pioneered in developing new and better ways to spot weld, stamp, fabricate and assemble aircraft parts and planes made of stainless steel. In using this metal to build a shining fleet of BT-12s for the U. S. Army Air Forces, Fleetwings has taken the lead in relieving shortages of other aircraft materials.

The skill and inventiveness shown by Fleetwings in keeping level with today's huge production requirements promises a new "ceiling" for Fleetwings' performance tomorrow.

★

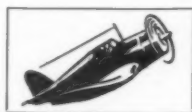
FLEETWINGS

Incorporated

BRISTOL • PENNSYLVANIA



INGENUITY, UNLIMITED: This tough and total war we're fighting has brought out every iota of ingenuity among Fleetwings engineers. In recent months, they have developed a large number of production aids . . . including, for example, more than 20 unique small tools, a new aluminum cleaning process and a streamlined system for mobile production. Fleetwings has made them freely available to other aircraft and parts manufacturers. . . "Cooperation" and "patriotism" are more than words today. This we have done to make them live . . .



SMALL TOOLS — BIG RESULTS: Several leading aircraft companies learned of the remarkable results achieved with Fleetwings-invented small tools. They asked us for blueprints. Now they're using these tools to speed their own output. For instance, a new rivet bucking yoke used for riveting in inaccessible places enables one man to do the entire job, faster, with rivets automatically lined up. A new crimping roll, simple and light in weight, bevels or crimps aircraft skin with one sweeping manual motion . . . works more accurately and faster than hammering or using a heavy bench roll.



MORE TIME-SAVERS: Among other Fleetwings-developed tools are a bearing greaser . . . now used in other aircraft plants . . . and a device for punching inspection holes in nose boxes for aluminum-alloy control surfaces that is 300% faster than previous methods. Also, airplane and automotive companies have adopted the new Fleetwings process for cleaning Alclad prior to spot welding. And aeronautical engineers from many other companies have profited by studying Fleetwings' welding methods and our new mobile, conveyORIZED production lines. . . Let's get 'em flying and then American aces will . . .

"KEEP 'EM FLYING!"

FLEETWINGS
Incorporated

BRISTOL • PENNSYLVANIA



Boeing Sea Ranger Flies

Boeing Aircraft Co., Seattle, has completed the "Sea Ranger", above, designed for the U.S. Navy, and first flight tests were made in mid-July with Edmund T. Allen, head of Boeing's flight and aeronautical division, at the controls.

The XPBB-1, although a two-engine ship, is in the weight class of four-engined aircraft. It is powered with Wright Cyclones. Although details are unavailable, the company describes the boat as meeting the needs for a long-range, heavily-armed overseas patrol bomber.

New \$20,000,000 War Plane Parts Plant Announced

A \$20,000,000 airplane landing gear manufacturing plant, to be known as the Cleveland Pneumatic Aerol, Inc., is expected to be in operation somewhere in Illinois with a force of several thousand employees by the first of next year.

Construction on the plant will start immediately, under the supervision of the government-financed Defense Plant Corp.

Cleveland Pneumatic Tool already has built one \$10,000,000 plant since the start of the defense program. In addition to landing gear, it makes tools for the airplane manufacturing industry.

New Aviation Broadcast

A weekly radio program to promote aviation and interest more young people in flying and model building, will be made available to affiliates of the Blue Network for local sponsorship beginning Aug. 31. The program is being presented in cooperation with the National Aeronautic Association and the Aeronautical Chamber of Commerce. The time is every Friday from 7 to 7:30 P.M. EWT and began July 10.

Wright Builds New Concrete Warspeed Plant

Construction of a newly developed type of concrete building known as a "Warspeed" factory which can be erected far more rapidly than steel or wooden plants, with a saving on 2,000,000 square feet of floor space of enough steel for a Navy cruiser, is announced by M. B. Gordon, vice-president and general manager of Wright Aeronautical Corp. Construction work on the new factory, one of the largest structures in the country, already is under way in New Jersey.

An apparent contradiction of the laws of gravity and logic, the new "Warspeed" factory is built from the roof down, with the floors and walls the final units to be completed. Designed by the Wright company in cooperation with Albert Kahn, architect, and the Mahoney-Troast Construction Co. of Passaic, N. J., the new building will save more than a half million dollars on the eastern project alone and will permit production to begin in the factory at least two months earlier than if a conventional steel-type building were used, he said. The same process is being used to expand the company's existing plants in the Middle West.

Transport Glider Production Starts

Boeing Aircraft Co., Wichita division, through its vice-president and general manager, J. E. Schaefer, announces that "large motorless troop transports for the Army Air Forces" glider program are now in production." Primary trainers and AT-15 crew trainers also are being produced at the Wichita plant.

Boeing, he adds, has been tooling up and working on gliders for some time to meet the demands of the Army's glider training program. Large scale production in the future is anticipated.

Another EXHAUST SYSTEM by AIRCRAFT COMPONENTS, Inc. for a famous line of fighting planes



**LET AIRCRAFT COMPONENTS, INC.
DESIGN, ENGINEER, BUILD AND
SERVICE the entire system**



AIRCRAFT COMPONENTS, Inc.

VAN NUYS, CALIFORNIA ★ WICHITA, KANSAS

Specialist designers and manufacturers of manifold exhaust systems, including cowl wells, muffs, air scoops, supercharger housings, for leading prime contractors... Also other stainless steel portions of engine nacelles.



AWPC Committee: Photo shows the Aircraft War Production Council's advisory committee on production, representing eight leading Southern California plane manufacturers, as they toured one of the Douglas plants. Seated, left to right, are: Jack Pierson, Douglas; John Demarce, Consolidated; H. Virgil Guadette, Lockheed; H. Bowling, Consolidated; E. Malloy, Ryan; C. Sharpe, Vultee; J. J. Fluck, North American; C. C. Hilliard, Douglas. Standing are R. A. Lawson, Vultee; Harris MacIntosh, Vega; George Pruden, Vega; R. R. Nolan, Northrop; Paul Buckner, Northrop; L. H. Provost; Douglas; T. O. Heydenfeldt, North American; G. E. Barton, Ryan and J. E. Young, Douglas.

Manufacturing Digest

B. F. GOODRICH CO., Akron, Ohio, announces a "revolutionary heavy-vehicle tubeless tire." Secret of the new development is said to be the specially designed locking member which retains the air in the casing.

GOODYEAR AIRCRAFT CORP. discloses development of a new type of suspension mounts for airplane motors, using rubber in somewhat the same manner as is used to cushion automobile engines. Advantages claimed are (1) less vibrational stress, (2) greater fire accuracy from gun turrets, (3) more accurate aiming of bombs and (4) less vibration strain on crew members.

BOEING AIRPLANE CO.'s Kansas plant is in mass production of motorless troop-transport gliders, says an announcement approved by the Army Air Forces.

VULTEE AIRCRAFT INC., has been assigned rights in a patent assigned William C. Rockefeller for a device which warns of an approaching stall. "The device places a suitably pointed opening near the trailing edge and from this a tube transmits pressure changes to a diaphragm within the wing and this in turn actuates an electrical instrument to warn the pilot of the approach of stalling conditions," says the announcement.

BENDIX AVIATION CORP., South Bend, Ind., has initiated a general magazine advertising campaign publicizing the role of aircraft instruments. First advertisement features "The Invisible Crew—the precision

control instruments, accessories and controls built by Bendix."

LOCKHEED AIRCRAFT CORP., Burbank, Calif., reports Warner Bros. film, "Wings for The Eagle," released recently, was made in Lockheed's main factory and shows the manufacture of P-38's, Hudson bombers and Ventura bombers. A preview performance was sponsored in Washington recently by the California members of Congress.

PLOMB TOOL CO., Los Angeles, has organized facilities of 27 companies into a sub-contracting system for volume tool production under name of Plomb Tools Contracting Co., a wholly-owned subsidiary. **CARNEGIE - ILLINOIS STEEL CORP.**, Pittsburgh, employees were congratulated by Lieut. Gen. Henry H. Arnold for production of steel airplane landing mats. Company now announces that its plant at New Castle will be taken over by WPB and converted into an aluminum forging plant; 12 large aluminum forging presses will be installed and about 2000 workmen employed.

UNITED AIRCRAFT CORP. Vice-President H. Mansfield Horner reports construction underway on \$85,000,000 plant in Missouri. Before starting the latest project, Pratt & Whitney had completed eight major expansions in Connecticut, raising output 30 times over the pre-war average. Now under construction are three new plants which are expected to double present output.

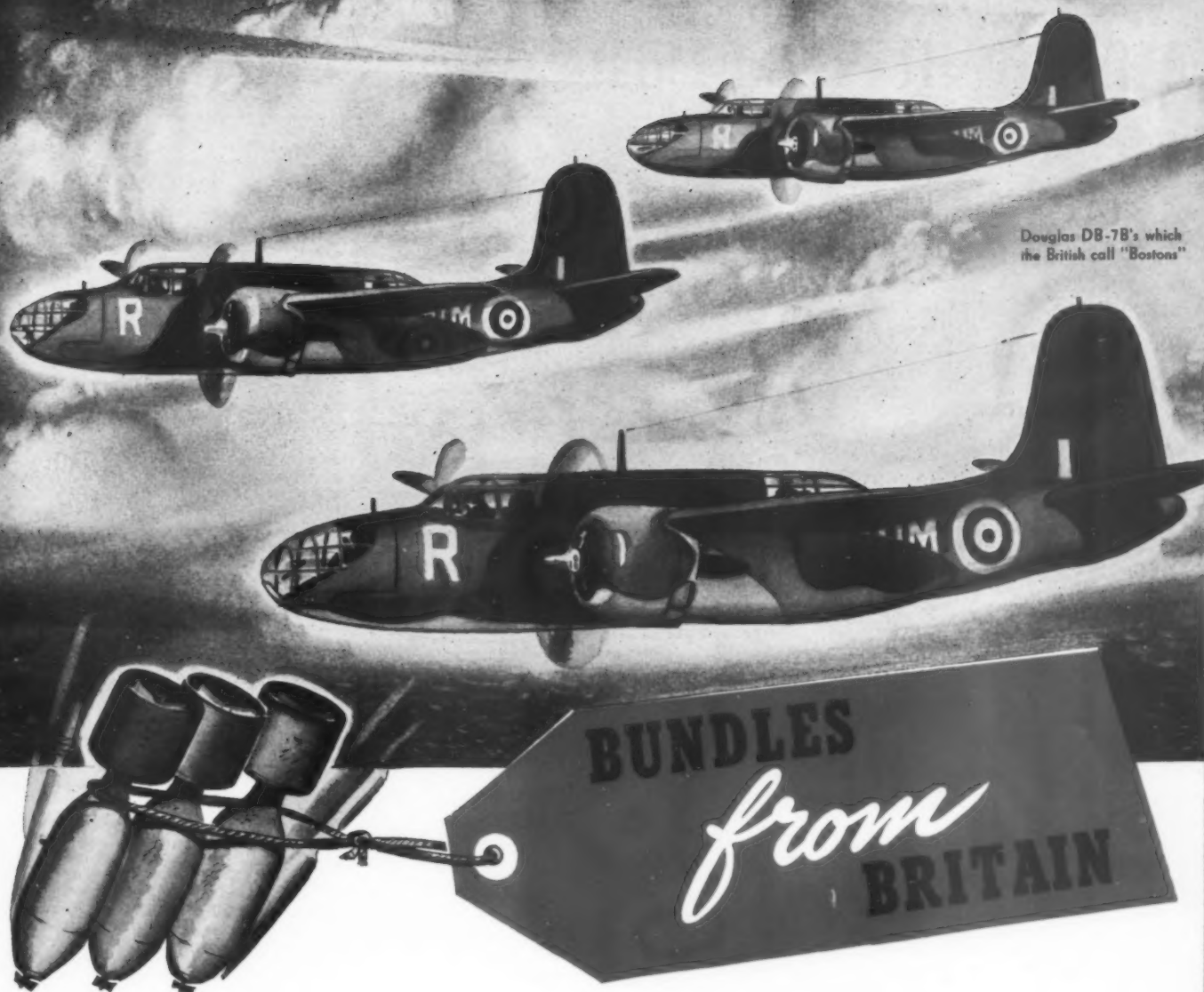
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Douglas DB-7B's which the British call "Bostons"

THESE "bundles" are being donated by the R. A. F., and their highly explosive nature is making life pretty miserable for Schicklgruber and Company. ¶The Boston bombers illustrated, together with many other American made planes used by the Royal Air Force in their devastating attacks on the Nazis, are equipped with Aerols.* ¶It is perfectly natural that Aerols are extensively used on planes being flown by our allies. For Aerols were the first hydraulic-pneumatic shock absorbing units, the type now almost universally

used in modern aviation. As a result, Aerols have been used on more planes than any other type made. They help to insure safe, smooth landings and take-offs on the fiercest fighters and the biggest bombers. ¶The many years of engineering experience, unmatched testing equipment, and huge production facilities that have given Aerols this enviable leadership, are now devoted to just one job—helping the United Nations overwhelm the forces of evil.

THE CLEVELAND PNEUMATIC TOOL COMPANY

AIRCRAFT DIVISION • CLEVELAND, OHIO

CONTRACTORS TO THE UNITED STATES GOVERNMENT

Also manufacturers of Cleco pneumatic tools for the aircraft industry, Cleco sheetholders, Cle-Air shock absorbers for trucks and buses, and rock drills for mining and construction work.

AEROLS*

* THE SHOCK ABSORBING UNITS ON AN AIRPLANE'S LANDING GEAR; THE NAME IS DERIVED FROM THE WORDS "AIR" AND "OIL"—THE FLUIDS USED TO DISSIPATE THE LANDING SHOCKS.

Mfrs. Will Need Post-War 'Service Stations'

Sales to Airlines Seen Depending on Type of Service Offered

By E. J. FOLEY

SERVICE—Personalized, consulting, active—will make or break the aircraft manufacturers bidding for post-war business.

It will be the keynote of their sales campaign. It will be their welcome foot-in-the-door of any airline. What the manufacturers will need are air-minded Dorothy Dix's by the dozen—aeronautically inclined wailing walls.

Why? The total war touches all and we feel it is opening the eyes



Foley

of Boeing, Ford, Lockheed, General Motors, Douglas, Consolidated, et al., to the value of service. The vigorous post-war competition will demand such attention from the victors. The planning for peace that goes on now in closeted "idea departments" throughout the industry must give serious thought to a Service Peace as well as a Production Peace. Victors who'll supply the passenger and cargo air fleets of tomorrow must offer more than a set of blueprints with each order. They'll have to show more than a three-view and snappy performance estimates to GET the order.

To touch one phase of this service, let's take a sample case of a present day technique, a technique which is sound but could stand much supplementing. The fictitious Inter-American Air Transport signs a contract for ten R-17's, the latest transport model of the equally fictitious Random Aircraft Corp. Inter-American has been operating for five years using, among other ships, several Random R-12's. This model has been no better and no worse than the standard transport. It and its engines, accessories, etc., have provided 24-hour days sprinkled with "blissful" relapses into profanity for every man in Inter-American operations.

So, in the face of the new venture (the first R-17 is now flying), the operator sends his most capable engineer, his Chief Inspector, his Senior Flight Officer, his Training Supervisor, and one or more key mechanics into the fray at Random. They're to spend a month or six weeks there to familiarize themselves with the R-17. Probably they'll have to draft servicing forms, collaborate in preparing required spare parts lists, sketch necessary servicing equipment, draft operating techniques, etc., etc.

These things they do and at the same time pick up maintenance short-cuts, possible pitfalls and how to avoid them, operating oddities, etc. Then, the caravan goes home with a couple of months

of work laid out before delivery time. Possibly, Inter-American has found it desirable to have an engineer in residence at the Random factory since the R-17 went on the board. If so, he'll probably stay until delivery time, posting the boys at home on the progress of the project.

This technique is modern self-service. The operator's realization of the job ahead prompts this preparation with its attendant expense. This procedure is tried and sound and if not necessary in its entirety will most probably be desirable from the operator's standpoint for some time to come.

Need Improvement

But we think it's only half of the needed attention, because when the R-17's arrive there's much room for improvement and many bugs to be licked. So many, in fact, that maybe the operator thinks it best judgment to beat through the solutions himself. The repetition of such trials fails to reveal any basic error in the operator's practice. Possibly, more time could be made available to the representatives for their indoctrination period. Maybe more lead mechanics should be included to assure best possible coverage of all maintenance phases.

However, here are the supplements that will go toward rounding out the technique in the post-war era. Our keynote is, of course, manufacturers' service to complement self-service. The service that came with the maturity of the auto industry may come to the aircraft industry in the days immediately ahead.

When the world returns to normalcy, we face an era when airlines assume a role of dominant importance in the transportation field. They won't be objects of public curiosity—dependent upon "try-a-ride" sales appeal or prohibitively expensive to the point of restricting volume traffic. They've passed much of this period already. They'll be an efficient, safe, fast and convenient medium of transport for anything from captains of industry to clerks, and from South American orchids to milling machines.

With operators pressing hard for every advantage in a highly competitive field, you, the manufacturers must serve commensurate

with the volume of business you get. You must supplement the self service of the airlines with an alert organization of your own, perhaps.

Harking back to our sample, if Random had more attentively serviced the R-12's, would the R-17 have been a better ship for it? If Random had had a service group—at least a pilot-engineer and a maintenance technician capable and well-grounded in R-12 and R-17 detail resident at the Inter-American maintenance base—how many loopholes could have been plugged on future designs? That blind spot in the motor mount that defied inspection without complete disassembly might have been nipped in the bud; instead it was a feature of the R-17. Those rivets in the elevator torque tube that worked loose after a month's service could have been bolts in the R-17. That oil tank sight gauge, so small in diameter that an hour was required before a true reading could be taken with high viscosity lubricants, might have been revised.

These are permanent values that such a setup would offer to the operator in the form of long-term service, every model better. But on-the-spot, day-to-day service is a simultaneous function practical if such a manufacturer's resident staff were possible. Spending every day with the operator's personnel in his shops, pitching right in with his services, noting every trouble right with the man who sees that trouble every day. There's no denying that the manufacturer would be offering the best in service, but at the same time it's obvious that he is getting at

least as much out as he puts in. The more we know of our product, the better we can make it. The more closely we associate with the daily operators of our product, the more we know about our brain child.

We doubt that there has ever been a time when the aircraft manufacturer has felt that his responsibility ended when the last rivet had been driven, the performance estimates surpassed and the delivery made. The industry as a whole has been too farsighted to operate on such a false premise. Every manufacturer has had a customer-service staff or its equivalent to handle gripes as they are reported by the operator. This is a self-evident recognition of the need for service, but we wonder if it's not in order for the manufacturer to go further, quite a bit further, in his service to tomorrow's world of air transport.

The pre-war school of thought subscribed to the belief that sufficient service had been rendered in setting up a clearing house at the factory to receive the necessarily wordy reports of troubles experienced by the operators. But it's our thought that for every problem solved by such a setup, 10 more may have been missed.

Personal Attention?

Why? Simply because many of the troubles fail to worm their way from the mechanic's helper through the foreman and inspectors to the operation or maintenance executives and thence to the manufacturer. If it be lack of time, lack of sympathy, underestimation of the importance of these troubles to new aircraft designs if not the current models or whatever else that nips these comments and recommendations, we're hardly qualified to state. But we know that many never see the light of day and both operator and manufacturer suffer thereby. Even assuming that every "bug" did come to the top of the heap and was reported, would personal attention by the manufacturer offer more expeditious, generally satisfactory solutions, or must we continue service by remote control?

If inattention and lassitude in manufacturers' service recurringly came to the attention of Government regulatory agencies as the number of aircraft in operation, service conditions encountered, etc., expand tremendously, will there be repercussions in this direction? We are certain that such will never come to pass, but we are anxious to know how the manufacturers propose to meet their responsibility in this direction.

We offer our possibility of manufacturers' service stations at key airports as having multiple inherent advantages. It provides on-the-spot, active personal attention to the operator's problems, which we are sure will be demanded in the world of tomorrow, a world shrunk by air transportation.

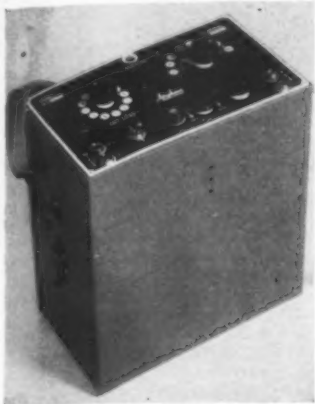


Handy Cycle: The Salsbury Supercycle, a product of Los Angeles' Salsbury Corp., with its 100 miles per gallon of gas may solve a problem of men, tools and materials transport in the service fields, cargo strips and passenger terminals of the future. Savings in interior plant operation where restrictions exist are claimed to be 25% over walking; airport or even hangar operation might net appreciably greater savings in time with a minimum expenditure.

Portable Transceiver Aids Civil Air Patrol

Designated as definitely not a "midget radio" in a portable case, the Model RX Portable Transceiver is the latest communication development of Airphone, Division of United Cinephone Corp., Torrington, Conn.

Designed to meet the needs of CAP operation, the RX makes it possible for any plane to have high-power two-way radio communication without the added weight or expense of charging equipment. Checking by 150 second transmissions over a period of 30 days, a



6-volt 13-ampere hour storage battery (navigation light battery) required no recharging.

General specs are as follows: Weight, 20 lbs.; Size, 11½" x 10" x 6"; Case: metal with carrying straps; Transmitter: 10 watt, 3105 kcs. frequency, 6 or 2 volt, Push button mike, Visual tuning indicator, 10-70 foot operable antenna length.

Receiver: 200-400 kcs. range, 3105 kcs. switch, 2-way interphone, High gain receiver—multiple tubes, Completely shielded, Permeability tuned RF transformers, Sensitivity 8 microvolts at 50 milliwatts, Audio output, Long life batteries supplied.

GE Introduces Limit Switch for Aircraft

Weighing slightly over two ounces, a new limit switch for aircraft application has been introduced by the General Electric Co., Schenectady, N. Y. The switch is designed to meet all U. S. Army Air Force stipulations. A 7/32" over travel increases the possibilities for its use.

Electrical Instruments

Permitting combinations of 4 current and 3 voltage ranges, the new P-14 portable a-c and d-c instruments of Westinghouse Electric and Manufacturing Co., East Pittsburgh, Pa., are said to be the most complete and flexible units in this class. Fully insulated, magnetically shielded cases are standard.

The scale length is 3.2 inches a-c and 2.8 inches d-c, and the units have an accuracy of $\pm 1\%$ of full scale.



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CAB Reverses Policy on Profit Recapture

**Airlines Encouraged by Decision Allowing
Panagra to Retain 'Excess' Profits;
Future Mail Pay Cut \$700,000**

By ERIC BRAMLEY

IN A sweeping restatement of policy, the Civil Aeronautics Board on July 7 ruled that Pan American-Grace Airways will be permitted to retain "excess" profits amounting to \$1,374,017, instead of being forced to return this sum to the government.

In reaching this decision, the Board indicated that its eye was on postwar development by pointing to the necessity for a "policy of precaution to avoid a weakening of our air carriers at a time when they will stand in greatest need of financial strength."

While deciding that recapture was "economically unsound," CAB warned that the excess earnings would not be considered as a part of Panagra's investment on which it would receive a profit until it reached a self-sustaining basis and was paid for the carriage of mail only on a basis of compensation for such service.

It also declared that the excess earnings "should not be devoted to the personal interest of respondent's stockholders through the payment of dividends," but that a special reserve should be established to which should be credited an amount equal to the excessive earnings not already incorporated in the carrier's capital stock account.

The Board's decision, which was in the form of a show cause order and was not yet final as this issue went to press, set a future rate of 39.38c per mile, to be effective from the date upon which the Postmaster General designates all Panagra schedules for transportation of mail.

Results of this future rate will be to cut approximately \$700,000 annually from the carrier's mail pay.

Affects Other Cases

The decision on recapture was a complete reversal of the Board's thinking as expressed in the American Airlines rate case just four months ago. In that case the Board ruled that American should repay to the government "excess" earnings of over \$4,000,000. However, the American decision, as well as that of Eastern, involving the same question, are now being reconsidered.

In general, the airlines were more than satisfied with the Board's new thinking on recapture. However, in oral argument on July 20, Gerhard Gesell, Panagra attorney, while praising the recapture policy, disagreed with the method in which the show cause order treated the so-called excess (he denied that there was an excess, because the money had been earned under a contract with the government, and all service had been performed. His disagreement was based on the

assumption that the Board's ruling will be final.)

Gesell claimed that if this method stands, it will be "recapture in disguise." The company, he said, is entitled to a return on this amount, which has been invested in property and equipment. Effect of the Board's order, he added, would be to create two classes of capital and to reduce the rate of return. If the amount is eliminated from the investment base, there is little incentive for the carrier to proceed with projects for the government, which are not commercially advantageous, he said.

PO Disagrees

William C. O'Brien, attorney for the Post Office Dept., disagreed with CAB's findings, urging the Board to effect an outright recapture of excess profits.

One of the most significant passages in the Board's order—and one of the most encouraging to both established and would-be international airlines—stated: "The decisive role which aviation is playing in the present war is but one of a number of prophetic evidences which point to an era of airline expansion in both the domestic and international fields which will surpass any that has gone before."

"This postwar development will impose upon our international air carriers a task of unpredictable magnitude. They are likely to be operating amid conditions of intense competition by the air carriers of other nations. Without the benefits of government-provided airport and airways facilities such as are enjoyed by domestic carriers in the United States, they will be operating in foreign countries subject to the hazards of possible economic and political changes which may affect them directly and over which this government will have no control."

"They will face a need for capital which is likely to be as sudden as it will be urgent. If they are to be able to satisfy those capital requirements they must present a reasonably sound financial condition to the investing public. Their position

will be greatly strengthened if they are possessed of ample reserves to act as a 'cushion' against the exigencies of the future."

In support of its policy not to recapture, CAB said: "While the public interest will not be served by air mail rates which place an unreasonable burden upon the federal treasury, it does not follow that the maintenance of reasonable mail compensation requires a rate policy which would compel a carrier, which has already been paid for services rendered, to refund to the government such part of its compensation over an extensive period as is found by the Board to have been in excess of a reasonable amount had a reasonable rate been established at the commencement of the period involved. The soundness of this conclusion becomes clear where rate reductions applicable to a long past period is seen to produce economic results which reduce the carrier's ability to perform the vitally important public functions imposed upon it by the Civil Aeronautics Act."

Other reasons given against a recapture policy were (1) it would impede long-range planning, (2) a measure of uncertainty would be injected into undertakings looking toward the expansion and development contemplated under the Act, (3) managerial incentive would be reduced, and (4) a "question mark" would be written across the carrier's financial statements.

Panagra's need for financial resources, CAB emphasized, is not limited to the postwar period, but is "immediate." In a little less than three years, the company has increased service on its international route from two to seven trips weekly, has inaugurated a new service across Bolivia, installed local service in Ecuador—"an expansion bearing a vital relation to the de-Germanization of air transportation in South America"—and is committed to purchase over \$1,000,000 worth of flying equipment and accessories, CAB explained.

Urge Night Flying

"Specifically, we believe that the program now under way for the improvement of its radio facilities should be hastened to conclusion and that the respondent should give careful consideration to the establishment of night flying over the parts of its route where such operation is feasible."

"The installation of night operation would do much to improve the carrier's schedule performance, which up to this time has not been entirely satisfactory, and would tend to eliminate the necessity of extremely early morning departures which constitute a substantial inconvenience to passengers."

"To reduce the financial resources of a carrier under such circumstances and at a time when costs are rising and commercial revenues are unpredictable would clearly lack that justification which should accompany a policy vitally affecting

air transportation. Thus to strip the carrier of a substantial part of its financial resources accumulated over a period of years would increase the need of the carrier for the future."

'Unrealistic'

"Nor is it any answer to suggest that future contingencies which may confront the carrier may be met by increases in the mail rates. Reliance upon such a policy would be unrealistic in view of the speed with which funds will have to be made available to the carrier and the time which would necessarily be required in the revision of mail rates."

Discussing the earnings which are called "clearly excessive," the Board pointed out that from Aug. 22, 1939 (date on which the rate proceeding was instituted) to Dec. 31, 1941, Panagra had total net earnings of \$2,050,490, whereas the Board considered that \$676,473 would have been "reasonable," leaving "excess" of \$1,374,017.

The \$676,473 "reasonable" earnings was based on a 10% return on the carrier's investment. The 10% was reasonable because of the "pioneering nature of the carrier's operations, the special financial hazards . . . and the prevailing rates of interest . . . in . . . foreign countries," CAB said.

In setting the future rate, the Board established another important precedent. After estimating that the company's non-United States mail revenues will amount to 120.90c per revenue mile, against operating expenses of 146.31c (leaving a break-even need of 25.41c), the Board allowed the carrier a 10% return on investment, or 12.03c.

Instead of return on investment being one of the factors in determining net operating income, it will be the only factor, for the time being, the Board emphasized. In other words, no "reward" for doing a good job of developing commercial business will be contained in the rates.

"We arrive at this conclusion, and give it effect in the present case, with explicit note of our anticipation that upon the conclusion of the war, or perhaps earlier if the war is prolonged, there should be a return to normal incentives to attract the greatest possible volume of commercial patronage and render the greatest possible commercial service; and in that future period the net earnings of such carriers as are in any degree dependent upon government support should again be established to reward carriers that display exceptional initiative in increasing the volume of their service and in improving the relation between the volume of service rendered and the amount of capital employed," CAB added.

The 39.38c future rate was arrived at by adding 25.41c break even need to 12.03c representing 10% return, and adjusting the total to allow for mileage differentials.

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Just as America's spiritual greatness is founded on individual freedom, so is our material greatness founded on our unique system of free enterprise.

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This is a way we have in the U. S. A.—a way that is both confusing and demoralizing to our enemies.

Today the many commercial airlines, normally competitive, are working together on the vital task of speeding our war effort. To this common purpose the air transportation industry is devoting its entire resources in materials and men.

Transcontinental & Western Air, Inc.



CAB Lists Accidents

Civil Aeronautics Board's safety bureau reports 10 fatal accidents for the month of June. All occurred in non-air carrier flying. Spins and stalls, the report said, were worst offenders, accounting for six of the fatalities.

New CAB Research Program Expected to Affect Future Aircraft Design

A PROGRAM of "protective research," which within a year may affect the design of airplanes, has been inaugurated by the Civil Aeronautics Board's safety bureau in cooperation with the Division of Medical Science, National Research Council.

The program is designed to reduce the severity of injuries in aircraft accidents and to eliminate them where possible.

Instructions have been sent to all safety bureau investigators to fill out detailed forms on accidents. Among items to be described are: seat occupied by passenger, direction body was thrown and location and attitude it came to rest, structural member or members of plane which caused injury, condition of seat and seat belt, and damage to cabin or cockpit adjacent to seat occupied by victim.

In addition to this, physicians and medical officers having charge of persons injured in aircraft accidents have been furnished with outline forms of the human body and have been instructed to indicate thereon in red ink all injuries.

"Even in minor accidents where the impact with the ground is relatively light, occupants of aircraft often receive severe or fatal injuries," the safety bureau explained. "The removal of projecting knobs on the instrument panel and the rearrangement of controls or structural members may eliminate hazards which might otherwise cause severe concussion, loss of an eye, or death, when an airplane accident occurs."

The bureau also explained that "a considerable number of survivals have occurred without serious injury under very extreme conditions whereas fatalities are often observed in seemingly moderate accidents."

"The causes of these survivals and fatalities are a matter of concern on account of the large numbers of aircraft in use by the armed forces and also because of the expected expansion in civilian use of aircraft in the postwar period.

"To increase safety it is necessary to relate present injuries to the objects responsible for the same to that improvements in construction can be made."

Railroads Postpone Airail Cargo Plans But Continue Study

A group of seven or eight important railroads, with the New York Central System as the guiding company, has been actively studying air cargo and has contemplated endeavoring entrance into air cargo operations until the war postponed such action. Studies and research, however, are continuing. In answer to a query from AMERICAN AVIATION, Carleton W. Meyer, assistant to the president of the New York Central, said: "We are as yet unable to make any statement for publication about our air cargo plans. However, it should not be too long before we are in a position to do so."

It is understood that a corporation known as Airail, Inc., has been, or will be, incorporated. The original plan was to interest airlines in participating with the railroads in such a company. James Goodwin Hall, a Texan who has had prior connections with aviation, and who has been one of the chief proponents of the air-rail plan, has resigned as consultant to the New York Central to enter military service. What will be done until after the war remains unknown until the railroads make a joint statement as indicated by Mr. Meyer.

TWA Continues Contest

Correcting an earlier announcement, TWA, Inc., has decided against suspending its annual aviation writing and photographic competition and will conduct the contest again this year. The company will award in 1943 cash prizes and trophies to outstanding aviation work by writers and photographers for the year 1942.

Night Contact Flight Rules Studied by CAB

MORE PRECISE and specific operational procedures and regulatory standards with respect to night contact flights by the airlines are being considered by CAB.

The Board has recommended that the Administrator of Civil Aeronautics establish, for inclusion in the airlines' operations manuals "such contact flight procedures at each airport as will insure that the climb to, and descent from, cruising altitude be conducted at a safe distance from all obstructions."

Proposed regulations are being considered which would require night contact flights to (1) remain within the confines of the proper twilight zone of the on-course signal, and (2) fly at an altitude not less than 1,000 ft. above the highest obstacle located within a horizontal distance of 10 miles from the center of the course intended to be flown.

The Board's recommendations were contained in its report on the TWA accident at Las Vegas, Nev. on Jan. 16, 1942, killing 19 passengers and the crew of three.

Probable cause of the crash, CAB said, was "the failure of the captain after departure from Las Vegas to follow the proper course by making use of the navigational facilities available to him."

Contributing factors were: "(1) the use of an erroneous compass course, (2) blackout of most of the beacons in the neighborhood of the accident made necessary by the war emergency, (3) failure of the pilot to comply with TWA's directive of July 17, 1941, issued in accordance with a suggestion from the Administrator of Civil Aeronautics requesting pilots to confine their flight movements to the actual on-course signals."

A dispute between Capt. Wayne Williams and TWA in 1933 "has no causal relation to the accident," the Board emphasized.

PAAF School Graduates 76 Pilots, Mechanics

Pan American Air Ferries, Inc., announce the graduation at the Miami schools of two classes, one a group of 58 junior pilots and also a class of 18 engine mechanics, all of whom were taken into the organization.

The new flyers received their wings from Col. Louis M. Merrick, Commanding Officer of the First Bomber Command, and Capt. Carl M. Dewey, director of the school, awarded the diplomas. The men will take assignments in the PAAF operations of flying military aircraft to Africa, the Middle East and beyond, and with the Pan American Airways-Africa Ltd., in Africa.

Mechanics' certificates of award and the school insignia also were presented by Hankins.



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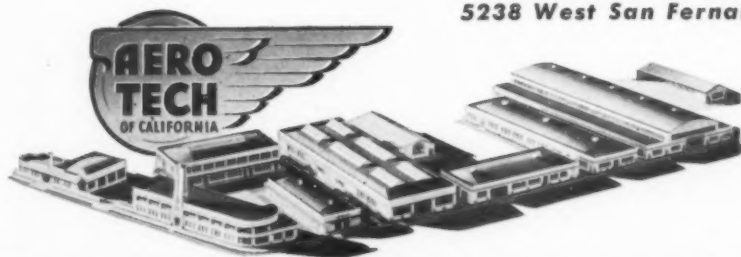
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The large number of Aero Tech graduates employed by some 200 firms in the aviation industry is believed to be a record among aeronautical training institutions giving true vocational and professional training. Their value to the industry lies not in their numbers alone, but also in training that is wing-to-wing with aeronautical progress.

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AGWI Steamship Company Asks Three Airline Routes

CONTINUED interest of steamship operators in post-war airlines was seen last fortnight when application was filed with the Civil Aeronautics Board for three air routes by International Airways, wholly-owned subsidiary of Atlantic, Gulf and West Indies Steamship Lines.

Routes sought—all for mail, passengers and express—include (1) New York-San Juan via Cuidad Trujillo, (2) New York-Havana and (3) New York-Mexico City via Havana and Vera Cruz.

Eastern Air Lines has asked CAB for permission to intervene in the case.

International's petition indicated that it does not intend to inaugurate operations in the near future, for in discussing equipment (company would use three new 30-passenger four-engine landplanes) it said: "Due to conditions existing at the present time it is difficult, if not impossible, to foretell just what the cost of such equipment might be when operations are started. It is anticipated, however, that at that time types will be more suitable and prices lower than at present."

AGWI, through its subsidiaries plays an important part in the West Indies transportation picture and has invested more than \$6,900,000

in property and equipment such as land and buildings in these islands, the application explained.

"Passenger traffic has been an important source of revenue to the steamship corporation, which believes that while there will always be certain cruise and other travel by ship, much of the more remunerative and business travel will be by air, and feels that since it is capable and willing it should be permitted to develop this phase of its present trade routes."

Low Mail Pay

The company also said that while it "has not yet completed all of its statistical studies, present indications are that very little, if any, cost to the government for transportation of mail would be necessary to insure a financially successful operation."

Capital requirements for operation of the air routes will be about \$950,000, which will be obtained from the steamship company through issuance by applicant of shares of capital stock or through loans, or both.

Due to the uncertainty of existing conditions, a technical airman for the position of operations manager has not yet been employed, the company explained.



'Airport Interview': Edward Salamony of the Pittsburgh Sun-Telegraph won the 1941 TWA photography award with this picture of Mrs. Roosevelt being interviewed at Allegheny County Airport.

3 Airlines Restore Scheduled Flights

Delta Air Lines, Eastern and Pennsylvania-Central announced recently that they were restoring service on various portions of their systems.

Delta added two flights between Atlanta and Cincinnati; Eastern reopened its Atlanta-Tampa route, and Penn-Central restored Washington-Baltimore service. These services were among those curtailed by CAB on May 26

Traffic

United Air Lines' revenue passenger miles in first half of 1942 were up 7% over the corresponding period of 1941, or 115,937,321 against 108,668,855. June 1942 figures were estimated. Mail and express gains also were recorded.

TWA's express poundage in first five months of the year jumped 144% over similar period last year. Originating poundage was 1,555,599, against 636,352. January showed the largest gain, with 295,502-lbs., against 91,018 for January 1941. Mail poundage increased 53% in the five months, with 3,504,423-lbs., against 2,294,252-lbs. in the 1941 period.

Northwest carried 83,168-lbs. of express in June, against 60,643 in the same month of 1941, while pound-miles were 65,024,502 against the June 1941 total of 34,956,371. Compared with May 1942, however, a record month, June express totals were lower.

American flew 103% more express poundage in the five months of 1942 than in corresponding period last year, or 3,619,515-lbs. against 1,744,746. Pound miles gained 99%, or 1,815,041,915 against 912,984,150. These figures, of course, do not include cargo carried under contract with the Air Transport Command. American's May express was 835,745-lbs., or 102% over a year ago, and pound-miles were up 113% to 425,725,231.

Railway Express Agency states air express shipments through LaGuardia Airport, New York, in June totaled 49,264-lbs., up 15% over last year. Gross revenue was up 52% over June 1941.

Trans-Canada Air Lines flew 10,334 passengers in May, up 713 over April and 2,211 over May 1941. Mail was 166,420-lbs., up 27,023-lbs. over April and 49,826 over May, 1941. Express volume set a new monthly high with 25,281-lbs.

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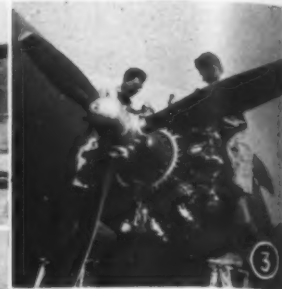
First, Exclusive Photos of Pan American



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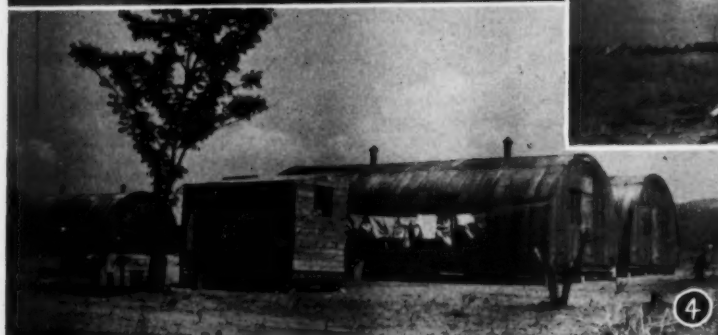
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⑫

1. When an African girl becomes 18 years of age, a dance is performed in her honor, in which she participates. This dance is being held in a Pan American Airways recreation hall, somewhere in Africa.

2. One of PAA's temporary maintenance buildings, made from the box in which a British Hurricane fighter was shipped.

3. Fouled plugs, caused by the dampness at night, are cleaned by PAA mechanics. Note the heavy boots.

4. Wash hangs on the line in front of temporary living quarters (Nissen huts). Left to right are store room, maintenance hut (Hurricane box) and two huts for living quarters.

5. Manager at one of the African airports signals a plane.

6. The latest in camp layout is this mess hall.

7. A C-53 and a DC-3 unloading at an African field.

8. Keeping food from spoiling in Africa is a problem, but PAA has to a great extent solved it. Photo shows one of the company's cold storage trucks delivering bread. All food eaten by PAA personnel is thoroughly inspected by the medical staff.

9. Two natives unload lumber from a C-53. The circle-centered star on the fuselage is no longer used, Army Air Forces having discarded it for an all-white star.

10. About a week before this picture was taken, a young American named Cushman arrived by plane at a field in Africa. Before he had descended from the plane he was asking about his radio equipment. Told that it had arrived but that there was no place to house it, he said, "Hell, I'll build that too." Within a week he was getting radio messages from the U. S.

11. A candid shot of "Bud" Baker as he writes a letter home. Most furniture in this region is made of native-grown mahogany.

12. One of the company's temporary camps, with American-built car in the center. A native has been refueling the car from the can on the ground.

Airways' War-Time Operations in Africa



13



14



15



16



17



18

13. Airport scene; Note Transport Command insignia on C54.

14. Frank C. Griffin, photographer for this series, used a self-timer to take this shot of himself writing home.

15. Officers ready to board plane for next hop.

16. A party after 6 months in Africa. Seated (l. to r.): Joe Coulter, Ed Young, a visiting British soldier. Standing are Bud Baker (wearing native mammy cloth), Dave Gluskin, Bill Hertel, John Deloese, Bob (Pittsburgh) Murphy, Fibber Magee, Howey Phelan, Flatbush Murphy and Bill Wadsworth. (These "mammy" cloths are native dress of chiefs; the larger the cloth the greater the wearer's importance.)

17. This diesel power plant, supplying electricity for a PAA-Air Transport Command air field, operates in the open.

18. One of the American heroes who have reduced disease and physical disability to a fraction of the extent prevalent in the first few months the Yanks were in Africa. This is Dr. Pearson checking a sample for malaria. PAA has furnished him with a complete and modern lab.

19. Chow—American. "All food is prepared in PAA kitchens under supervision of some of America's best chefs."

20. Picnic? Yes, only in Africa it's a "bush trip." Without censorship or thought of advertising pay, here's the menu: Heinz beans, Spam, S&W fruit cocktail, with Pepsi-Cola and U. S. beer. Left to right: John Loomis, Joe Coulter, Nail Ironmunger, Frank Griffin, Cecil Gutteridge, and "Luke."

21. Candid shot of a PAA pantry shelf. Lensmaster Griffin says a former Hotel New Yorker chef operates at the kitchen where these cans were photographed. Shown are packages of cherries, prunes, cocoanut, strawberries, jam, grapefruit, A-I Sauce, yams, loganberries, liverwurst, blackberries, onions, fruit, chili sauce, and Snowdrift shortening.

22. Pan American bus standing before the High Street Cafe in a "censored city." The boys can get American liquor here; only native beer is available elsewhere in town.

23. Typical construction gang of natives under American supervisors. All materials are imported from the U. S.



19



20



21



22



23



Conversion: Photo shows Herbert Hilburn, Braniff Airways senior mechanic, handing apprentice mechanic Bill Peck a seat from one of the company's DC-3's, preparatory to converting the plane into a cargo carrier. After the seats and other luxury appointments are removed, the cabin is reinforced and its windows covered.

Statutes Suspended

Legislation suspending the Statute of Limitations in certain instances until June 30, 1945 has been sent to the President for signature. The purpose of the proposed legislation is to suspend any existing statutes of limitations applicable to offenses involving the defrauding or attempts to defraud the U. S. or any Federal agency, for the period of the present war.

During the World War many frauds committed against the Federal government were not discovered until the 3-year statute of limitation had almost expired.

TWA Awarded Mail on Marquette Line

TWA has been granted permission by CAB to transport air mail, as well as passengers and property, over the route from St. Louis to Detroit via Cincinnati, Dayton and Toledo. The route will be known as AM58.

Service between Detroit and Cincinnati was put into effect immediately. However, schedules between St. Louis and Cincinnati will be deferred until resumption of commercial operations between those cities.

AIRLINE COMMENTARY

Aviation received two big shots in the arm last fortnight . . . One was the big job turned over to them by the Air Transport Command (see lead story in this issue) . . . The other, somewhat overshadowed, but tremendously important, was the decision of the Civil Aeronautics Board that it would be "economically unsound" to recapture "excess" profits of Pan American-Grace Airways . . . The same rule will undoubtedly apply to the large domestic operators . . . This enlightened thinking on the part of the Board can well mean the difference between success and failure for these companies in the postwar period, when they will need financial strength . . . Only four months ago, in the American Airlines rate case, CAB voted for recapture (this case is being reconsidered) . . . The change, many think, can be attributed to new leadership . . .

There is no doubt that the steamship companies have big ideas about air transport in the postwar period . . . Several have filed applications with CAB for airline routes, one as late as last week . . . Many aviation observers give them a good chance, believing that they can obtain routes under the Civil Aeronautics Act . . .

If you want to touch off a hot subject in air transport circles, mention priorities on airline travel . . . "The way that was handled cost the airlines \$1,000,000," one high official said recently . . . Interpretation given by newspapers to the announcement of passenger priorities led the general public to believe that the airlines had been taken over, that it was useless to try to get a seat . . . Result: more empty seats than you might think . . .

One of the best aviation stories of the year involves the war-time practice of drawing window curtains on airliners three minutes before landing and three minutes after taking off . . . It seems that a passenger, about to disembark from a plane at an airport recently, was complaining bitterly about this "blackout" . . . The pilot, walking down the aisle behind the man, tapped him on the shoulder and said: "You think it's tough on you? What about me up there in the cockpit?" . . . The passenger probably is still recovering from shock . . .

Aviation people were glad to see Charles I. Stanton sworn in as Administrator of Civil Aeronautics last fortnight . . . Charlie worked his way up through the ranks, knows his business thoroughly . . . Commerce Secretary Jesse Jones was in fine form at the ceremonies, remarking that maybe Mrs. Stanton should be sworn in instead . . . He also asked if the chief of the Weather Bureau was in the sweltering group . . . Comdr. F. W. Reichelderfer stepped out . . . "Do something about the weather—immediately," Jones ordered . . .

Despite the small number of planes operated by the airlines, Post Office officials say informally that air mail volume is 40% over last year . . . Single-engine mail operations are working out nicely . . . Two routes are in operation—Northeast and Northwest—and two more will start shortly—Mid-Continent and Inland . . . Don't look for these schedules to go above one round trip daily, unless a definite demand develops . . .

Airline officials in general are not pooh-poohing Henry J. Kaiser's proposal to build giant cargo planes in shipyards . . . "Don't underestimate Kaiser," one responsible executive said . . . Nothing can be written about it now, but Kaiser may have bigger plans (almost fantastic) than most people think . . .

In case you've wondered about the suits filed against the government by United Air Lines as a result of the 1934 air mail contract cancellations, there can't be a decision before fall . . . The Court of Claims doesn't meet during the summer . . . Commissioner Akers found there had been no fraud in the cancellations . . . The Administration will be uncomfortable if these findings are upheld . . .

If adopted, the recommendations of Donald Nelson's air cargo committee can give postwar aerial freighting something to work with from the minute the last shot is fired . . . The recommendations are secret but rest assured that they are sensational . . .

E. B.

THIS IS OUR JOB...

THE 20 Airlines of the nation are contributing to the full limit of their experience and resources to help win the war.

This job is clearly divided into three parts:

First, we are under contract to the United States Armed Forces, to transport arms and ammunition, men and essential supplies to our military stations wherever they may be.

Second, we have for many months been helping to train combat pilots and ground personnel for

the U. S. Army and Navy, and performing other vital military and naval services.

Third, we are continuing operation as a common carrier air transport system with schedules serving the important war production centers.

"The whole-hearted fashion in which the air carriers have cooperated with the military services in furtherance of the war effort," states the Civil Aeronautics Board, "has made it possible for them to continue operating under private management . . ."

THE 20 AIRLINES OF THE NATION

REPRESENTED BY THE AIR TRANSPORT ASSOCIATION, 1515 MASSACHUSETTS AVENUE, N. W. WASHINGTON, D. C.

All American Aviation, Inc.	Colonial Airlines, Inc.	Inland Air Lines, Inc.	Pan American Airways System
American Airlines, Inc.	Continental Air Lines, Inc.	Mid-Continent Airlines, Inc.	Pennsylvania-Central Airlines Corp.
Braniff Airways, Inc.	Delta Air Lines	National Airlines, Inc.	Transcontinental & Western Air, Inc.
Cadillac Air Transport	Eastern Air Lines, Inc.	Northeast Airlines, Inc.	United Air Lines Transport Corp.
Chicago & Southern Air Lines, Inc.	Hawaiian Airlines, Ltd.	Northwest Airlines, Inc.	Western Air Lines, Inc.

And to Canada: Canadian Airways, Ltd. • Trans-Canada Air Lines • Yukon Southern Air Transport, Ltd.

Airlines Explain: This is the latest advertisement of the U. S. airlines, explaining their part in the war effort. It points out, among other things, that common carrier air transportation still exists. The airlines have not been "taken over" for the duration, as many people believe.



AIR SPEED INDICATOR



TELEGRAPH REMOTE INDICATOR
(Quadruple Engine Unit)



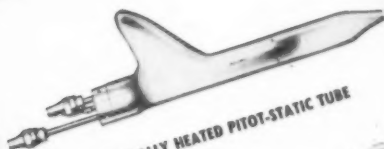
SENSITIVE ALTIMETER



DIRECTION INDICATOR
(Compass)



MANIFOLD PRESSURE GAGE



ELECTRICALLY HEATED PITOT-STATIC TUBE

CRADLE OF PRECISION

Many of the world's most important contributions to precision aircraft instruments have been cradled on the Kollsman drafting board. The first practical Sensitive Altimeter and the Direction Indicator are notable examples. Kollsman craftsmen have, in fact, either created or refined almost every type of precision aircraft instrument. Those shown here are but a few of the more familiar types—their faces open

to view and easy to read, which is typical of Kollsman design. These instruments and many others—many of them only ideas stirring in the minds of Kollsman engineers—are Kollsman's contribution to aircraft of the United Nations at war today . . .

And to the commercial and private planes that will circle the earth in a world at peace tomorrow.



VERTICAL SPEED INDICATOR



TACHOMETERS
(Direct and Remote Indicating)



ENGINE GAGE UNIT



FREE AIR THERMOMETER
(Ice Warning Indicator)

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AIRCRAFT INSTRUMENTS
Division of
SQUARE D COMPANY

ELMHURST, NEW YORK • GLENDALE, CALIFORNIA
DETROIT, MICHIGAN

Incorporations

New Jersey—Otto Aviation Corp., Newark; 2,500 shares; agent, Michael N. Chanalis.

New York—York Aircraft Corp., New York, aircraft of all kinds. Edwin P. Stevens, 32 Liberty St., New York. \$100,000.

New York—Federal Aircraft Products Corp., Manhattan; aircraft of all kinds; Leon Hertzfeld, 19 W. 44th St., New York City; 805 shares.

Illinois—Moline Air Service Inc., 501 15th St., Moline; 1,000 shares; operate airports, aviation centers, terminals; Oakleaf and Churchill, Moline, Ill.

New York—Madison Aircraft Corp., village of Madison; aircraft of all kinds; 100 shares; Kent, Hazzard & Jaeger, Bar Bldg., White Plains, N. Y.

New York—Mobile Aircraft Service, Inc., New York City; freightage agency; Abraham J. Drosnes, 152 W. 42d St., New York City; \$20,000.

Michigan—Holmes Engineering Co., Lansing, Mich.; airplanes, balloons, flying machines and aircraft engines; \$1,000,000. Incorporators, Fred J. Holmes, Ralph M. Zerby and George H. Flynn, all of Detroit.

Indiana—Superior Skyrocket Corp., 1501 West Maryland St., Evansville; manufacture and deal in aircraft; Edwin F. Karges, Evansville; 1,000 shares.

Texas—Fort Worth Aircraft Co., Inc., Fort Worth; manufacturing; \$4,000; Incorporators, C. Carl Werner, J. A. Patterson, Christine E. Werner.

Delaware—United Aircraft Corp. of Missouri; aircraft; \$1,000; principal office, Corporation Service Co.

New Jersey—Aircraft Instrument Schools, Inc., Paterson, N. J.; 1,000 shares; Joseph Simon, agent.

New York—Robinson Aviation Inc., New York City; aerial photographic surveys, etc.; \$800,000; Alexander & Green, 120 Broadway, New York City.

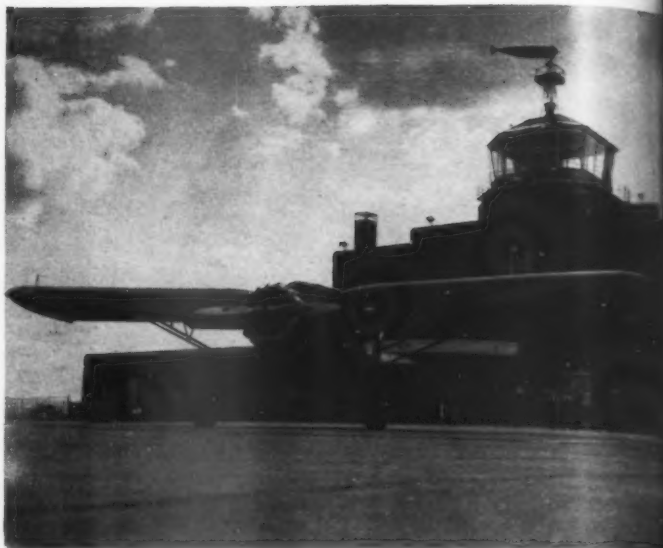
Connecticut—The Armstrong Aircraft Corp., West Haven; 200 shares; Ralph C. Towne, secretary, New Haven.

Delaware—Colley-Cain Aircraft Corp.; aircraft; \$100,000; Prentice-Hall, Inc., agents.

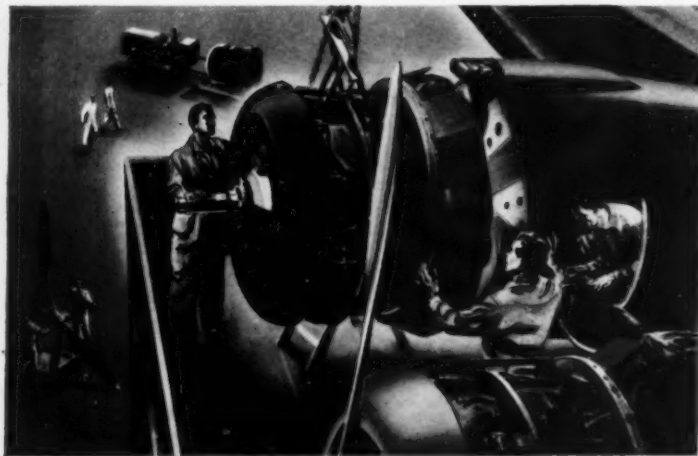
Illinois—Teleflex Corp. of America, 2501 North Keeler Ave., Chicago; manufacture cable control apparatus and fittings used in connection with airplane parts.

Ohio—Variety Aircraft Co., Dayton, O.; manufacture of aircraft parts; Officers Ira M. Coppock, E. J. McBride and C. E. Monnier.

Delaware—Aircraft Parts Corp.; aircraft; \$100,000; United States Corporation Co.



Old Days Return: "Betsy" Stinson, retired since 1935 from scheduled flights, opened another single-engine era in U. S. transport history in mid-July when she restored mail and express service between Twin Cities and Duluth for Northwest. CAB okayed single-engine ships for property and mail, during the current shortage of larger transports, in order to keep some routes operating. Betsy flew between Billings and Cheyenne for Wyoming Air Service until sold seven years ago to NWA for instrument training. Jack Galt, pioneer NWA pilot, made the first flight last month, and Doc Shafer and R. W. Kingsbury are also assigned to the route. Loading crew on first flight were Bert Talbot (left), Clarence Brandt and John Sweetnam.



Breeze Connectors Keep 'em Flying



Quick and efficient overhaul of America's fighting aircraft is made possible by Breeze Multiple Circuit Electrical Connectors. Used in installations at firewalls, bulkheads, radio, wings, and elsewhere throughout the ship, Breeze Connectors cut maintenance time wherever it is necessary to make or break many circuits simultaneously. To meet the requirements of the aviation industry, Breeze has designed many types of connectors which have now become standard with the U. S. Air Forces, Signal Corps, Army and Navy.

Breeze

NEWARK, CORPORATIONS INC. NEW JERSEY

Germans Grab and Use DC-3s, Lockheeds, British Report

American DC-3s and Lockheed 14s have been commandeered by the Nazis in occupied countries and are now in use on several German routes, according to a recent edition of the British magazine *The Aeroplane*.

Deutsche Lufthansa is using DC-3s on its once-daily schedule from Berlin to Lisbon, while weekly service to Stamboul has been started with Lockheed 14s which belonged to L.O.T. (Polskie Linje Lotnicze), the publication reported.

The DC-3s may have been those of KLM, Sabena or a Czechoslovakian company—"certainly some of KLM's as the Netherlands insignia has been seen inside the DC-3s at Lisbon," it said.

"This practice is typical of the Hun who would delight in flaunting captured equipment on the same aerodrome with the DC-3s flown by the Dutch pilots on the KLM service between Great Britain and Lisbon."

Government Publications

Among recent Government publications dealing with the subject of aeronautics are the following:

AMERICAN AIR ALMANAC. May-August, 1942. Pages 241-486, chart. (Navy Dept., Nautical Almanac Office.) The object of this volume is to provide in convenient form the astronomical data required for aerial navigation. Price \$1. Classification number N 11.6/3:942/2.

ARMY TECHNICAL MANUAL 6-210. Conduct of field artillery fire using air observation. March 21, 1942. 47 pages illustrated. Supersedes TM 6-210, Apr. 5, 1941. Price 10 cents. Classification number W 1.35: 6-210.

NAVIGATION TABLES FOR MARINERS AND AVIATORS. 6th edition. 1942. These tables are designed to facilitate the

navigation of surface craft or aircraft. Used with the nautical or air almanacs, no other books are required. 109 pages. (Hydrographic Office, H. O. No. 208.) Fabrikoid. Price \$1.20. Classification number N 6.8:208/942.

WOMEN WORKERS. Women's factory employment in an expanding aircraft production program, 1942. Series of reports on women's present and possible employment in war industries based on field surveys by Women's Bureau investigators since early spring of 1941. 12 pages. Price 5 cents. Classification number L 13.3:189-1.

When ordering these publications, send remittance by postal money order, express order, coupons, or check to the Superintendent of Documents, Government Printing Office, Washington, D. C. Always give title, issuing office, or classification number when listed.



Leonardo da Vinci studied the flight of birds and concluded that man, too, might fly. He also designed many military weapons. But he did not suggest that man might mount his cannon on wings and go forth to kill. The great inventions have been for peace, not war, although many have been perfected by the exigencies of war. The world is learning that aviation, however powerful as a weapon, has its greatest potential as a common carrier. For, as such, it unites, rather than separates, the nations of the world.

AMERICAN AIRLINES *Inc.*
ROUTE OF THE FLAGSHIPS

Burden Called Staunch Friend of Aviation

CIVIL AVIATION'S new chief in the Commerce Department, W. A. M. Burden, can be counted on to go to bat for civil flying. He's a staunch friend of aviation from A to Z. He can be depended on to carry on the training and educational programs launched by Assistant Secretary of Commerce Robert Hinckley, who is now with the Sperry Gyroscope Co.

Burden inherited everything from Hinckley except the title of Assistant Secretary of Commerce. This title has gone to W. L. Clayton, wealthy cotton broker and friend of Commerce Secretary Jesse Jones, but Clayton will leave all aviation matters to Burden, who carries the title of special assistant to the secretary. Hinckley was usually referred to as Assistant Secretary of Commerce for Air, but actually there was no legal basis for this title. Hinckley also had other duties besides aviation, whereas Burden will confine himself solely to aviation work.

A New York blueblood of considerable private means, Burden doesn't have to work. Actually, he's one of the hardest workers in Washington. Owner of the finest private aeronautical library in the country, which he turned over to the Insti-

tute of the Aeronautical Sciences, he has been engaged in financial work in New York, chiefly on his own account, for a number of years. More recently he joined National Aviation Corp. in New York. He is a former director of United Air Lines.

When the war became imminent, Burden turned his attention to South American aviation and has recently completed an exhaustive confidential report on the subject for the Coordinator of Inter-American Affairs, Nelson Rockefeller. Subsequently he became a vice president of the Defense Supplies Corp. and was a director of the Latin American Republics Aviation Division. In this capacity he was working under Mr. Clayton, his present superior.

He won't make any radical changes in the CAA set-up, and not being a politician and not liking detailed administrative work, he'll leave those two activities up to others. He is sympathetic to industry problems, knows air transportation and private flying intimately. In general he has a high opinion of the CAA men and organization, and can definitely be listed as an aviation expansionist interested in education, training, research, etc. One of his special interests is helping Latin American aviation.

He wants to get out into the country and talk with CAA men, the industry, and local operators. He is a good listener, rarely commits himself on any subject until he's ready to act. Perhaps most important for the immediate future,



Perfection: Shown above is Harry J. Maine, Link trainer instructor for Western Air Lines, who did a bit of fancy blind flying in the trainer to write this slogan for the company's war bond campaign.

he'll battle to retain CAA independence for the duration.

Not everyone knows that Burden came close to being on the original Civil Aeronautics Authority, and was prominently mentioned for vacancies on the Civil Aeronautics Board, but his connections have always stood him in well in Washington. W. W. P.

New Insulating

Especially manufactured to provide protection for metals, fabrics and composites, a new insulating coating, Resiflex, which withstands hot oils, salt spray, high voltage and varying temperatures, has been announced by David C. Brown Co., 17532 Wisconsin Avenue, Detroit, Mich.

The coating, a synthetic resin, required baking from 6 to 30 minutes at 275-350°F., depending upon the size and type of material of the unit being treated. This low-viscosity, water-clear coating, one coat of which will resist 500 volts at 25 amperes, also claims these significant properties: water-proof, alcohol-proof, mineral acid proof at regulation temperatures, oil resistance, high dielectric strength.

CAB Opinions Available

Opinion No. 23, Pan American Airways Company—Temporary Certificate of Public Convenience and Necessity (Lisbon-Foyines operation); Docket No. 699.

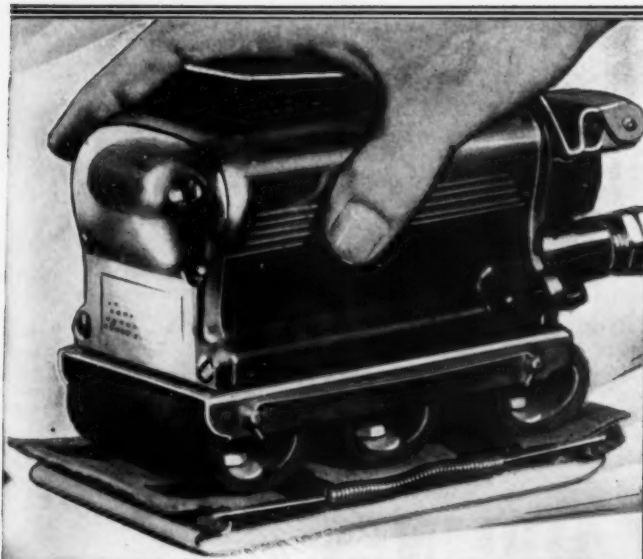
Opinion No. 25, Pan American Airways, Inc.—Temporary Amendment to Certificate of Public Convenience and Necessity; Docket No. 713.

Opinion No. 27, United Air Lines Transport Corporation—Mail Rate Preceding; Docket No. 16-406 (A)-1.

Opinion No. 34, Pennsylvania-Central Airlines Corporation—Service to Elizabeth City; Docket No. 619.

Copies may be obtained from the Superintendent of Documents, Government Printing Office, Washington, D. C., for 5 cents each. When ordering, include the opinion serial number and the docket number as well as the opinion title.

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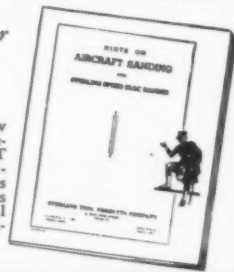
REDUCE MANPOWER TWO-THIRDS . . . SPEED SANDING THREE TIMES!

Save hours and hours of precious production time on plywood block sanding, scarf joint cleanup and feather edging, sanding sealer coats, wet sanding between coats of lacquer, wood pattern sanding, weld cleanup, Kirksite Die finishing, propeller sanding, plastic glass polishing, etc., etc.

Used by Beech Aircraft Co., Bell Aircraft Corp., Boeing Airplane Co., Curtiss Wright Corp., Doak Aircraft Co., Timm Aircraft Corp. and Vultee Aircraft, Inc., and many others.

An excellent tool for
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INDUSTRY—This in-
formative booklet, "Hints
on Aircraft Sanding" is
packed full of helpful
information—sent with-
out obligation.



A thousand years of service with United Air Lines



C. T. Wrightson	June 16, 1925	H. E. Nourse	May 20, 1927
E. P. Lott	November 1, 1925	R. C. Wright	June 10, 1927
Curtis Barkes, November 15, 1925		Charles E. Ferry	June 15, 1927
Seely V. Hall	January 7, 1926	R. T. Freng	June 16, 1927
R. E. Pfennig	February 1, 1926		June 25, 1927
Jack C. Bobo	February 15, 1926	W. P. Hoare	June 27, 1927
Ray Dehority	February 23, 1926	O. C. Richerson	June 27, 1927
Bernice Bartholomew	March 1, 1926	E. M. Gordon	July 1, 1927
R. W. Ireland	March 4, 1926	H. M. Beery	July 1, 1927
Robert C. Herring	March 29, 1926	E. H. Borgard	July 1, 1927
E. Van Vechten	April 1, 1926	Nugent Bousman	July 1, 1927
Grover Tyler	April 9, 1926	Robert J. Burns	July 1, 1927
R. L. Dobie	April 14, 1926	Lester R. Carr	July 1, 1927
A. L. Everett	April 15, 1926	Fred Corneliusen	July 1, 1927
E. S. Maroney	May 1, 1926	R. George Darke	July 1, 1927
Paul E. Johnson	May 9, 1926	Ray W. Gohr	July 1, 1927
C. M. McCormick	May 10, 1926	Harry Huking	July 1, 1927
Peter Berger	June 1, 1926	Ralph Johnson	July 1, 1927
Jack Stevenson	June 23, 1926	E. Hamilton Lee	July 1, 1927
George Grogan	July 1, 1926	John M. Maxwell	July 1, 1927
H. C. Larsen	August 3, 1926	Henry Mossman	July 1, 1927
C. R. Bowman	September 18, 1926	E. M. Rosier	July 1, 1927
C. V. O'Callaghan	October 15, 1926	R. J. Sedlacek	July 1, 1927
A. G. Tomlin	November 12, 1926	C. A. Sluder	July 1, 1927
J. R. Cunningham	December 1, 1926	Don Stombaugh	July 1, 1927
Donald W. Tyler	January 7, 1927	Henry Thomas	July 1, 1927
Hazel Smith	February 1, 1927	R. L. Wagner	July 1, 1927
E. L. Remelin	April 8, 1927	Claude Wall	July 1, 1927
W. D. Knowles	May 7, 1927	Gordon Wood	July 11, 1927
Humbert Costa	May 11, 1927	H. F. Salisbury	July 13, 1927
Max Henne	May 16, 1927	James Gowans	July 18, 1927
		R. D. Edwards	August 1, 1927
		Samuel P. Martin	

In air transportation, fifteen years is a long time. It covers the entire span of commercial scheduled mail-passenger flying from the pioneering planes to the present.

Sixty-three members of United Air Lines' organization have completed fifteen years or more of continuous service with the company. Of that number, one has completed seventeen years and twenty have finished sixteen years of service (United's origin dates back to 1925,

when the first of its predecessor companies was established). This combined service totaled almost 1000 years.

Airline operation today is as different from the methods of fifteen years ago as the 1942 automobile from the Model T. Yet their fifteen years of daily association with air transport operation have given these 63 airwise people a seasoning and experience that is invaluable today.

These people exemplify the experience of our nation's airlines, whose personnel

have a "know-how" of organized scheduled flying which no other group in the world possesses. To them, and all they stand for, United Air Lines pays tribute.

They represent the pioneers of an industry that is ably serving its country during these times of war. They represent the key members of an industry that stands on the threshold of the great Age of Flight.



UNITED AIR LINES

Carl Wootten Urges Air Taxi Service to Use Civil Planes

There are enough lightplanes and other types of civil aircraft sitting idly on the ground or in hangars today to provide 4,974,000 air passenger miles per day or a passenger capacity of 12,436 per day if the average journey was only 400 miles, according to a study made by Carl Wootten, sales manager of Beech Aircraft Corp., Wichita.

Wootten's study gives further evidence of the vast civil aviation facilities not being used in the war effort, all pointing to the fact that there is adequate air transportation available for all who need it in the war effort, to say nothing of coastal patrol and training.

Wootten recommends the establishment of a network of feeder taxi-lines, using lightplanes to shuttle back and forth between plants and serving many communities and war plants now deprived of scheduled air transport. Citing a number of specific cases in which the lightplane has taken the place of a transport airliner, the Beechcraft sales manager believes the war effort is being slowed down because available air transportation, through the

use of the nation's big reservoir of aircraft, is not being used.

He also pointed out that valuable rubber on automobile tires could be saved by the wider use of lightplanes. Such taxi planes, he said, could supplant the automobile in many instances, and the airplane uses but very little rubber, far less than an automobile.

Many Idle Planes

Basing his figures on CAA records, Wootten estimates that there are 12,436 certificated civilian aircraft not now being used, or if being used, not to any great extent.

"Several hundred of this total are airplanes of the Beechcraft, Waco and Stinson type with 3-4-5 passenger capacity and with ranges of a thousand miles a day or better", he said. "Disregarding this fact and considering all of the 12,436 airplanes as single passenger light ships (pilot and one passenger) and figuring on the basis of an average of 400 miles per day per plane, reveals a potential 4,974,000 air passenger miles per day or a passenger capacity of 12,436 per day—enough

mileage wasted through non-use to fly 997 bombers a day to Libya.

"The significance of these figures can best be gained by comparison to the mileage flown by airline transports. In December, 1941, the combined domestic airlines flew a grand total of 103,351,958 revenue passenger miles. Breaking this down into days reveals that all the domestic air lines flew a combined daily average of only 3,333,934 revenue passenger miles as compared to the estimated potential of 4,974,000 passenger miles per day of civil aircraft.

"If only half these planes, which at present are idle or are doing incidental flying only, were utilized, they would greatly augment the transportation services of the nation which are and will be increasingly overtaxed."

Wootten pointed out that lightplanes lack the luxuries and speed of airliners, but they have other advantages which compensate for such shortcomings. First of all, they are faster than any other type of travel and the fewer number of transports now in service are keeping many people from flying who have war work to do.

Serve Small Points

Secondly, the lightplane can go direct to small points of destination not on the airline routes. The lightplane is ready to go anytime to any point.

What is needed, he said, is simply an air taxi service unhampered by schedules or priorities.

"Contractor Jones in Wheeling, Youngstown, and Elmira, could then go to Washington or to Flint to attend to his urgent business whenever he wanted to go. Sub-Contractor Smith in Tulsa could then go to Memphis when he wanted to go, a trip that requires 17 hours and 30 minutes by train and only 3½ hours in the average lightplane.

"Only yesterday one of our executives here at Beechcraft phoned me seeking transportation to Tulsa for three of our employees who had to go there in regard to war production matters. It takes 6 hours and 9 minutes by train from Wichita to Tulsa and the average lightplane can easily make it in one and three-quarters hours. There are more than 50 lightplanes sitting idle here in Wichita that could easily perform such missions. It is reasonable to believe that this same situation is duplicated in hundreds of places every day.

"This entire proposal should be likened to the transportation system found in big cities where one can get bus transportation on the main avenues and by circuitous routes and transfers ultimately reach certain points along the routes. It is the taxis, however, that form the web of transportation to the thousand and one places within the city not serviced by scheduled bus transportation."

As to the cost of a national air taxi service, Wootten maintained it could be entirely self-supporting. The operating expenses of the average lightplane could be met merely by charging the usual airline rates. For example, the round-

CAA Type Approvals

(Approval numbers and dates of amendment in parentheses)

Type Certificates

Aircraft

Timm. PT-220-C. 2 place open land monoplane. Engine, Continental W-670 6A. (750. 4-28-42.)

Globe. GC-1. 2-place closed land monoplane. Engine, Continental A-66-4 (753. 5-13-42.)

Glider

Frankfort. B. 2-place closed land monoplane. Class I or II. (7. 4-23-42.)

Appliances

Wollam skis. model W-1650. Approved static load per skis 825 pounds. (148. 4-23-42.)

Goodyear. smooth contour wheels model 39" SC. 39-inch. Approved static load per wheel, 10,000 pounds. (145-22-42.)

Goodyear. smooth contour wheels model 44" SC. 44-inch. Approved static load per wheel, 12,000 pounds. (145-22-42.)

New Models Added To Old Type Approvals

(Approval numbers and dates of approval of new models in parentheses)

Aircraft

Howard. DGA-18K. 2-place open land monoplane. Engine, Kinner R-5, Series 2. (Type Certificate No. 739. 4-17-42.)

Appliances

Heath. plywood floats, model 1460A. Approved maximum standard weight of airplane: 1,640 pounds (American requirements), 1,560 pounds (Canadian requirements). (145. 4-23-42.)

Hayes. low-pressure wheels, model 1701A and 1701M. 17.00-16. Approved static load per wheel, 15,000 pounds (Type Certificate No. 10. 5-22-42.)

Engines

Air-cooled motors, Franklin 4AGC-199H3. 4-cylinder horizontal opposed air-cooled with 35:22 reduction gearing, 110 horsepower at 3,500 revolutions per minute at sea level pressure altitude for all operations. (Type Certificate No. 228. 5-2-42.)

trip airline fare from Wichita to Dallas is \$42.95. A Culver, for instance, could make the round-trip on an operating expense of \$26.10 including insurance, fuel, and \$1.00 an hour depreciation. This would leave \$16.79 for administrative expenses.

Wootten suggests that the airlines themselves could take over the operation of the air taxi service on a large scale, using personnel and equipment supplied by the Civil Air Patrol.

"Of all the grandiose waste in this entire war program," Wootten said, "one of the greatest is the waste through non-use of the vast number of civilian pilots that would be capable with a minimum of training, to perform many of the vital functions of our war effort. Surely there is some way, if not through this plan, that civilian pilots and civil aircraft can be utilized to an advantage in this great program.

"The real need for auxiliary transportation will not be fully felt until present tires wear out and when gas rationing is in full effect. Many thousands of additional travelers will be forced to the then greatly overburdened rail and bus services. In the meantime tires are fast wearing out. Why not conserve tires, rail and bus facilities for essential uses and speed up the war program by putting these 4,900,000 miles a day to some practical use."

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Airliners Not Needed by ATC Now — George

THE Air Transport Command has no intention of requisitioning additional transports from the domestic airlines at this time, Brig. Gen. Harold George informs AMERICAN AVIATION.

The chief of the expanded ferrying and air transport service of the Army Air Forces praised the nation's airlines in the war effort and asserted that every attempt would be made to maintain the lines as a nucleus of equipment and pilot training.

It is still the intention of the Army to follow to the letter the President's recently expressed hope that the domestic air carriers retain a minimum of 200 transports, Gen. George said.

He warned, however, that it is impossible to predict the trends of war, and that a decision tomorrow may be necessary on a matter deemed remote today.

CPAL Take Over Shops

Canadian Pacific Air Lines, Ltd., has taken over the overhaul and repair equipment in operation at the Boeing Aircraft plant in Vancouver, at the request of directors of the company. Manufacturers are being relieved of overhaul services so that they may devote maximum energies to production.



Keeps 'Em Flying: TWA workmen at Kansas City gas one of the company's DC-3s for a night flight. One of these ships consumes between 80 and 90 gallons every hour.



Night Scene: This striking photo, taken at TWA's Kansas City headquarters, shows some of the company's Douglas equipment in the hangar for maintenance work. On the left can be seen one of the camouflaged DC-3s being operated by TWA for the Army.



As Good as New: After every 700 hours of flying time, United Airlines' Mainliners are virtually made new again at the company's maintenance base at Cheyenne, Wyo. In this new photo, one of the planes is receiving expert attention of mechanics before being given final inspection and a test flight.

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Today, when the great silver ships come gliding down out of the Eastern sky with the sun splashing vivid high-lights on metal cowl-ing and wing-tips, old Uncle Ezekiel scarcely looks up from his chair in the porch. His one action is to call over his shoulder in a cracked, petulant voice: "Late again there, Martha. 'Tis five o'clock by the airbuzzer—and where's my cawfee? If yez was only half as efficient . . ."

"Ay, them planes are real efficient," says Uncle Ezekiel. But he knows nothing of the hours and days and months of hard, unrelenting work in drawing-



office, laboratory, factory and hangar that have gone to **make** that efficiency. He knows nothing of the calculations and cross-calculations, the checking and re-checking up to the nth, degree and beyond. He knows nothing, for example, of the importance of competent filtration.

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Bookshelf

ALL AMERICAN AIRCRAFT, by Ernest K. Gann; Thomas Y. Crowell Co., 432 Fourth Ave., New York, N. Y.; \$2.00; 121 pp.

A volume describing in detail more than 40 types of American aircraft: How fast they fly, how large they are, what loads they carry. As important as the text are the some 100 photographs showing these planes on the ground and in the air.

Pilot Author Gann divides his book into 3 sections: the first dealing with commercial types; the second, with private planes; and the third, with military aircraft.

MODERN FLIGHT, by Cloyd P. Clevenger and illustrated by Clayton Knight; Noble & Noble Publishers, Inc., 100 Fifth Ave., New York, N. Y.; \$2.95 294 pp.

Million-dollar pilot Clevenger gives to the student pilot advice and information to enable him to fly more quickly, more easily and with greater precision.

Written in interesting easy-to-understand language, the text follows each stage of elementary, solo and advanced training as recommended in the latest CAA Flight Manual. Chapters on Army, Navy, Marine Corps, and CAA flight training have been checked by experts in the services.

Diagrams and sketches are by Clayton Knight, RFC pilot during the first World War and former U. S. Army flyer.

ELEMENTS OF PRACTICAL AERODYNAMICS, by Bradley Jones, M.S., professor of Aeronautics, University of Cincinnati; John Wiley & Sons, Inc., 440 Fourth Ave., New York, N. Y.; \$3.75; 450 pp.

This is a revised edition of an elementary text for classroom presentation of the subject of aerodynamics. In this latest edition material has been omitted that from a later viewpoint seems unessential and much new material has been added. Chapters have been rearranged to aid in presentation. A short chapter on aerostatics is included in the belief that students of aerodynamics (air

in motion) should be acquainted with the elements of the sister subject (air at rest). For the same reason the author has included chapters on aircraft instruments and aviation.

DYNAMIC METEOROLOGY, by Bernhard Haurwitz, Ph.D., associate professor of meteorology, Massachusetts Institute of Technology; McGraw-Hill Book Co., Inc., 330 W. 42d St., New York, N. Y.; \$4.00; 360 pp.

An account of investigations and results in recent applications of the laws of thermodynamics and hydrodynamics to the study of atmosphere and its motions. No previous knowledge of meteorology is assumed, although some preliminary training in general meteorology facilitates the study of the text. The material has been the subject of lecture courses given at the University of Toronto during the past six years by the author.

Problems given at the end of each chapter are chosen to indicate the possibilities of practical applications of formulae.

THE FACE OF SOUTH AMERICA by John Lyon Rich. American Geographical Society. Special Pub. No. 25. New York. Profusely illustrated. 300 pp.

The author is a professor of geology at the University of Cincinnati. In 1939 he made a flight by Pan American Airways around South America and took more than 900 photographs from the air. About a third of these are included in the book. The text merely supplements the photographs, which are remarkably good and representative of South America considering the circumstances under which they were taken. The author must have had considerable cooperation from PAA in order to obtain so many excellent aerial views from a strictly commercial airline trip. Geologists and lovers of aerial photos alike will appreciate this volume.

INDUSTRIAL CAMOUFLAGE MANUAL, by Konrad F. Wittmann in collaboration with the faculty for the Industrial Camouflage Program at Pratt Institute, Brooklyn, N. Y.; Reinhold Publishing Corp., 330 W. 42d St., N. Y., N. Y.; \$4.00; 127 pp.

This is a report of the activities to date on industrial camouflage—a fast developing new area of war effort—by interested personnel at Pratt Institute.

The manual is both an interesting account of ingenious methods of camouflage developed and a practical and informative guide. Excellent diagrams and aerial photographs are included.

AIR NAVIGATION. Parts I and II, edited by E. Molloy; Chemical Publishing Co., Inc., 234 King St., Brooklyn, N. Y.; Part I, 127 pp.; Part II, 132 pp.; \$2.50, each.

Part I: Licenses and regulations form the subjects of the opening chapters of this text. Succeeding chapters deal with the general principles of air navigation, navigation by astronomical observations and radio navigation. The correct use of maps and charts and the subject of meteorology, or weather lore, completes the treatment. Informative and technical reading. Careful study of the subjects dealt with in this volume will form an excellent basis for the acquiring of

Short Cuts Listed by Westinghouse

Westinghouse Editorial Service, East Pittsburgh, has recently published "17 Ways to Speed Production," condensed manufacturing shortcuts. Some of these may have special value in aircraft maintenance, as well as manufacture:

1. For drilling thin sheet with less burr and improved chip clearance, grind drills with a flat spur point rather than conventional.

2. To make quick, fairly accurate viscosity control tests, drop a funnel-shaped cup of fixed weight and with predetermined orifice into liquid to be compared with standard. Time in seconds required for liquid to flow through orifice and reach a certain level in the cup is taken as measurement of viscosity.

3. For lengthening solder-iron life (prevention of burning out and maintenance of correct temperature), use a currently available housing-stand which holds iron when not in use and fits over tip of iron. Thermostatic control in housing disconnects iron when overheating occurs.

4. To save time in cotter pin applications, use a tool resembling a screw driver with a two-pronged blade. One prong, rounded, fits cotter eye; other prong, flattened, spreads pin ends. Heat treated tool steel is used.

For further details on any of these hints contact Westinghouse.

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It may be applied to surfaces previously coated with calcimine or casein paints, provided the old covering is light on the wall. It is not recommended for use on oily or greasy surfaces. Setting time is two hours; drying time twelve hours; finish is dead flat viewed at a 70° angle.

Singlekote is available in white but may be tinted with alkali resistant colors in oil. One gallon of the concentrate makes five quarts of paint when mixed with one quart of turpentine or spirits. The finish is said to combine economy of water-type paints with washability and durability of oil type coatings.

practical knowledge of navigation instruments and methods which are dealt with in the companion volume, Part II.

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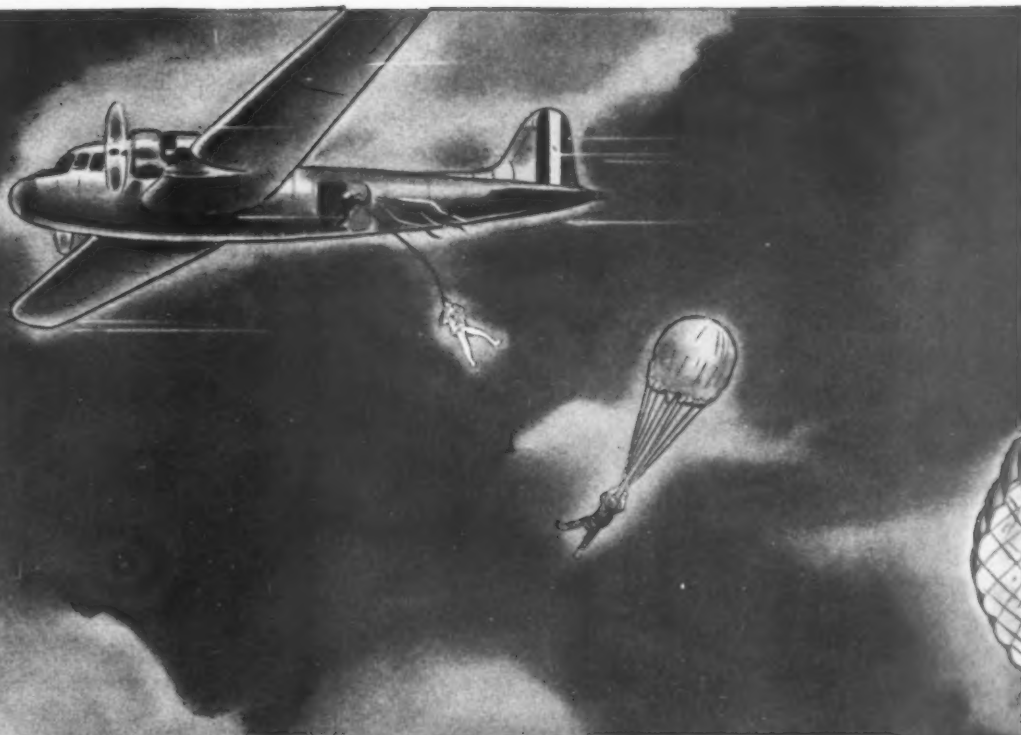
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